

# SD Times

SOFTWARE DEVELOPMENT

The Industry Newspaper for Software Development Managers

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## GERONIMO APPLICATION SERVER PROJECT HITS 1.0

JMS, licensing help to set platform apart  
from JBoss, says Apache project manager

BY ALEX HANDY

The Apache Software Foundation announced in mid-December that Geronimo 1.0, the open-source J2EE application server, was ready for release. The news was sent out slightly ahead of the actual completion date, however, and Geronimo quietly remained hidden until the day after Christmas, when the software was finally declared fit for public consumption.

Dain Sundstrom, IBM's chief architect of Gluecode and a member of the Geronimo project management commit-

tee, said IBM donated the initial Eclipse tooling for Geronimo, and also donated code for Geronimo's new management console. The latter code originally came from Gluecode, which IBM acquired in May. Gluecode is a production-ready open-source Java app deployment platform. IBM has kept its contributors on the project.

Sundstrom is one of those contributors, and he said that the new management console shows off the direction in which Geronimo will be heading.

Yet despite Sundstrom's ded-

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## RUBY'S BEEN WORKIN' ON THE RAILS

BY ALEX HANDY

Ruby on Rails, the Web application framework that reached version 1.0 in mid-December, has gathered a full head of open-source steam over the past year, and numerous luminaries of the Java community, such as Bruce Tate and David Geary, have headed to Ruby, thanks to a development environment that's been called both quick and easy.

"I think Ruby on Rails has a

► continued on page 18

## Major Vendors To Build SOA Object Model

Claim proposed Service Component  
Architecture will ease service creation

BY EDWARD J. CORREIA

A group of companies is attempting to extend SOA specifications to include a language-neutral object model, over objections that the effort is redundant to work already being done in the Java Community Process.

The proposed Service Component Architecture (SCA) and



SCA will abstract language-specific APIs, says Iona's Newcomer.

the related Service Data Objects (SDO) specifications are intended to simplify the creation of business services for accessing data stored in multiple locations and formats. The effort is being spearheaded by BEA, IBM, Iona, Oracle, SAP, Siebel, Sybase, Xcalia and Zend.

Iona CTO Eric Newcomer said the project will help to bridge the gap between the kinds of service interfaces developers are looking to build and the language-specific objects or programs that typically exist in the enterprise. "Web services [are] about interfaces for messaging," Newcomer said. "Behind those interfaces can be Java, C++ or whatever, but you might have to do a lot of coding to implement what you have in that service interface."

Most Web services tools, Newcomer explained, start with

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## SOX Compliance Will Cost Companies US\$6 Billion

Developer impact will remain next  
to nil, AMR research report shows

BY JENNIFER DEJONG

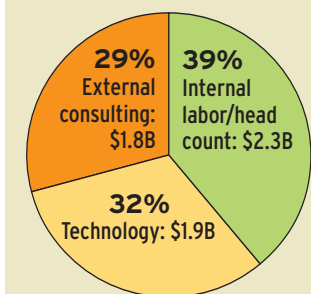
Companies are expected to spend US\$6 billion on Sarbanes-Oxley compliance efforts this year. But such expenditures aren't likely to impact development teams.

Of that total figure, technology spending accounts for 32 percent, or \$1.9 billion, said John Hagerty, a vice president at AMR Research, the Boston-based company that conducted the SOX spending survey. Two software categories—compliance management and continuous controls monitoring—are expected to dominate technology expenditures, the survey found. Both operate essentially as stand-alone auditing tools and are aimed at top executives and

financial managers. As a result, they have "very little impact on developers," said Hagerty.

Designed for CFOs, compliance management software keeps track of the controls a company has in place to prevent fraud. Controls apply to how business processes are carried out, and many are concerned with segregation of duties, said John Verver, president of profes-

## SHELLING OUT BIG BUCKS FOR SOX



Source: AMR Research

sional services at ACL, a Vancouver, British Columbia-based company that provides auditing software and services. For

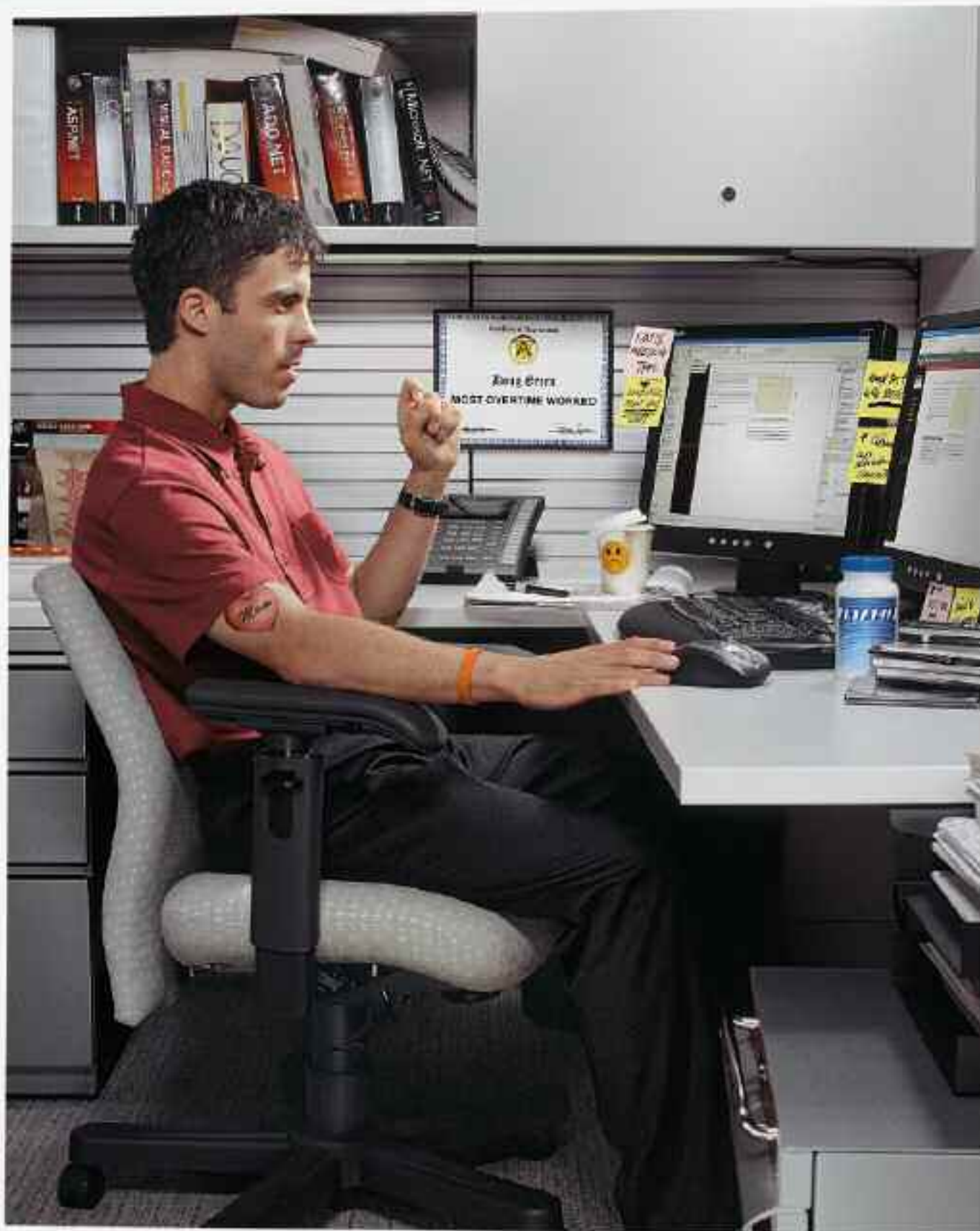
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## SPECIAL REPORT

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# Komodo Walks Away From Microsoft Support

ActiveState drops Visual Studio plug-ins for Perl, Python, XSLT; adds Ruby on Rails to IDE

BY ANDY PATRIZIO

The ActiveState giveth, the ActiveState taketh away.

With the latest release of its Komodo IDE for dynamic languages such as Perl and Python, ActiveState has jettisoned support for Visual Studio, citing a release-schedule conflict and a lack of customer interest.

ActiveState also announced in December that it would drop its engineering support for the Visual Perl, Visual Python and Visual XSLT plug-ins in Visual Studio 2002 and 2003, and that there will be no upgrade for VS 2005.

The source code of abandoned software projects has often been released as open source, allowing the community that remains to continue at least some level of support for the code, if not continuing development. However, the plug-ins incorporate source code from Visual Studio, so

ActiveState says it cannot release the source code.

Part of the problem was timing conflicts, due to the release schedules of Visual Studio and Komodo, but the primary reason for ending support was that Komodo's customers weren't interested enough to make the effort worthwhile, said David Asher, CTO for ActiveState.

"With the next version of Visual Studio, it was a significant amount of work to ensure compatibility...but people weren't interested. People going into Visual Studio .NET were going with the full intent to be .NET everywhere. They just weren't that interested in doing Perl or Python, so we just decided to focus on our main IDE," he said.

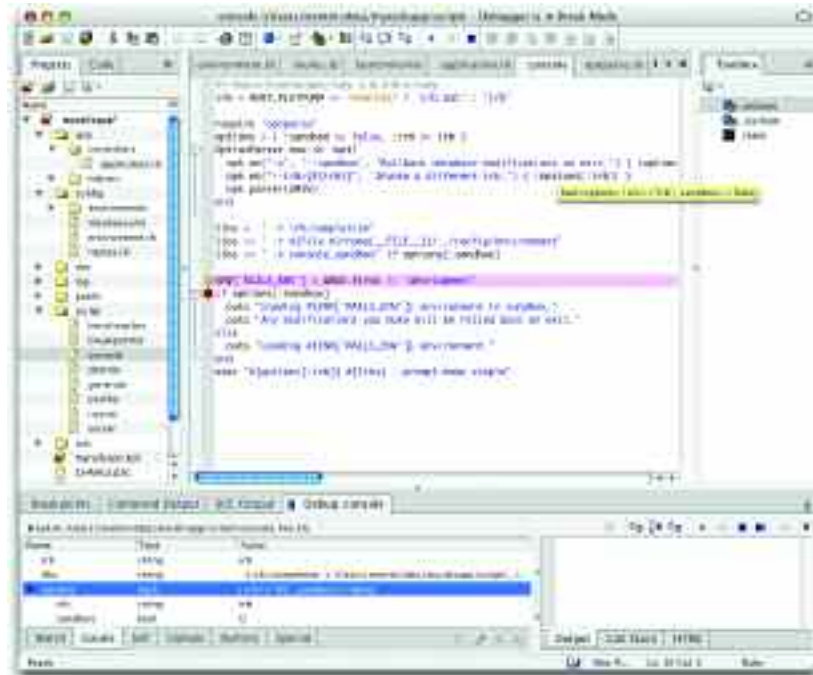
## RAILS MORE PRODUCTIVE

Komodo 3.5, released in December, adds support for the Ruby language and Ruby on

Rails, an application framework gaining popularity as a lightweight alternative to J2EE.

"Java has built significant complexity and infrastructure, which probably makes sense in some settings, but the majority of Web-based apps don't need that level of complexity and sophistication," said Asher. "People find they are more productive with Rails than they are with J2EE."

In addition, Komodo offers Multilingual Input Method Editor (MIME) support for foreign language characters, and support for Mac OS X 10.4 (Tiger) and 10.3 (Panther).

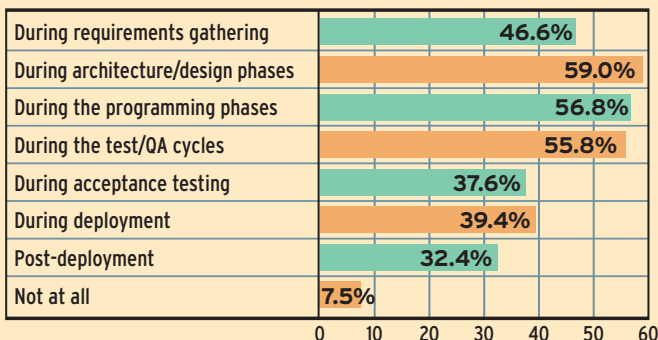


The addition of Ruby on Rails should increase developer efficiency, says company.

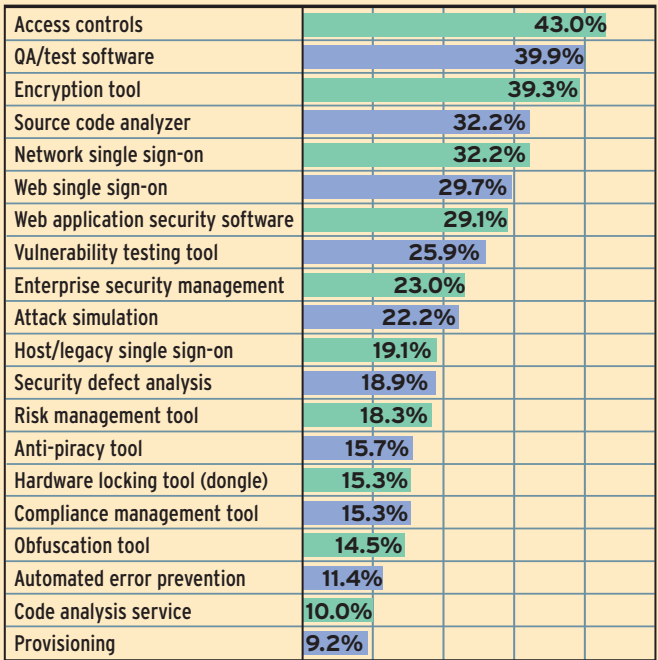
Komodo 3.5 is available on Linux, Mac OS X and Windows for US\$29.95 for the Personal Edition or \$295 for the Profes-

sional edition, which adds source code control, a GUI builder, shared tool box and Solaris support. ■

## When are software security practices an active part of your application development process?



## Which of the following software security test tools do you use currently?



Source: BZ Research

# Developers, Managers Trust Homegrown Apps

Study shows more than half believe apps are secure

BY ALAN ZEICHICK

The software development industry is split evenly between companies that say they invest sufficiently in software security practices, and those that say they don't invest enough. That's according to a new study from BZ Research, a division of BZ Media, publisher of SD Times.

According to this research, completed in December 2005, 37.5 percent of developers and development managers say that their company invests the appropriate amount in software security practices, and 8.9 percent say they invest more than is required. However, 45.5 percent say that their company doesn't invest enough, and 8.1 percent aren't sure.

The study includes responses from 636 individuals, and has an accuracy of (+/-) three percentage points.

Even though many companies don't invest enough in software security practices, say respondents, most software is tested for security. In fact, 31.1

percent said that all homegrown software is tested for security; 19.4 percent said that more than half of software is tested, and 26.1 percent said that some, but less than half, is tested. Only 10.7 percent said that none of their in-house software is tested for security; 6.0 percent weren't sure.

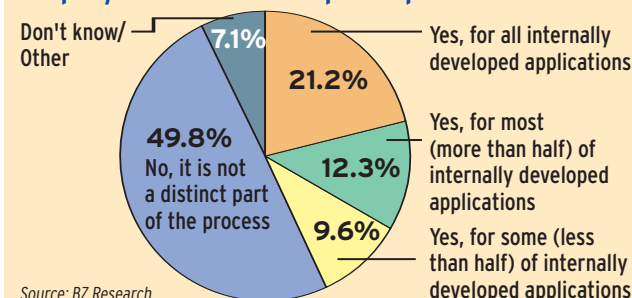
This amount of testing gave rise to strong confidence in the security of internally written applications, as 29.9 percent of respondents characterized such software as "totally secure" or "very secure." Another 27.5 percent called it "secure," 18.4 percent said it was "somewhat

secure," 7.6 percent said "not very secure," and only 1.3 percent described such applications as "highly insecure." The remainder didn't know or didn't develop software for internal consumption.

"We rely heavily on the built-in security of the host operating system and host networks," said one respondent. "Beyond that, we use individual user-ids, expiring passwords, SSL, and test that Web pages cannot be accessed outside of a valid log-in." Another replied, "[Security] is not adequate. The

► continued on page 14

## Is security testing considered to be a distinct part of your company's software development process?



Source: BZ Research



# Kenai: ExamineSOA Enterprise Automates Testing

Claims high-end tool extends compliance analysis capabilities to architects, QA testers

BY ANDY PATRIZIO

Kenai Systems has filled out its product lineup of automated Web services testing tools with the release of ExamineSOA

Enterprise, which allows testing of Web services for compliance with security policies and best practices by nonsecurity experts, such as architects or QA testers.

The point-and-click solution can read testing template files from Kenai's entry-level ExamineXT and midrange ExamineSOA products.

The tool works by capturing the policies to test against in Web services. Once the tests are constructed for such things as validation, encryption and checking for

a valid signature, they can be saved as scripts for testing future applications that anyone in the development chain can run.

"This allows you to capture the learning process as you make these tests and codify them as policies. It will allow you to lower the hurdle of security for some folks," said Kenai CTO Jack Quinnell. By setting up tests for security exploits and compliance, applications can be tested well before they reach the testing or deployment stage, he added.

In addition to the ability to create custom tests, ExamineSOA Enterprise comes with a shared library of basic test templates, including vulnerability profiles, policies, test suites and test results.


ExamineSOA Enterprise supports testing for compliance with regulations such as Sarbanes-Oxley, Gramm-Leach-Bliley and HIPAA. Also, Web services can be tested against industry standards such as WS-Policy and WS-Security. The SQL tests can perform SQL injection tests against Microsoft SQL Server, MySQL and Oracle.


ExamineSOA Enterprise can compare test results from multiple tests, so developers and testers can measure how much closer they come to compliance with subsequent tests. Testers also can run a single test saved in a batch.

Kenai built a migration path between ExamineSOA Enterprise and its previous releases. All three can import and export test templates and test results from each other. However, only Enterprise has a shared database function, so test results can be published for others to view, said Quinnell.

ExamineSOA Enterprise is available now for US\$1,995. ■

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# Mac OS: PowerPC-to-Intel Switch Not Entirely Smooth

BY ALEX HANDY

Chuck Rogers has had a pretty difficult autumn. As the chief evangelist for MacSpeech, maker of the MacSpeech speech recognition package for Mac OS, he's learned firsthand that moving to the Intel platform isn't going to be as easy as he'd first hoped.

Despite Apple's responsiveness in dealing with the transition, MacSpeech still has not been able to complete the move.

In September, Rogers began a move from CodeWarrior to Apple's Xcode. "Once we're in Xcode, I think it will be easier to make improvements," he said. "If you use a development tool that's developed by the people who make the OS, you're going to be much more in sync with the OS."

But after three months of work, Rogers now feels that the transition will not be complete until the end of 2006. He blames the delay on the nature of his product, and on Apple, but he's not complaining about either.

"Speech recognition requires support from Apple which they don't have yet," said Rogers. "We started the process, but Apple found that they had some resources for speech input, things that they hadn't completed yet. It's also a matter of getting our stuff over to Xcode. It's not difficult, it's just time-consuming."

Rogers added that his software experiences no slowdowns when running under Rosetta, Apple's stop-gap mechanism for running PowerPC code on Intel hardware. Rogers has been using an Apple/Intel development machine. "We're planning on doing some compatibility testing at the labs at Apple. We're not anticipating much of a slowdown, unless Apple does something dramatically different in the architecture of the machines they're sending. We can't guarantee it, but we don't anticipate any problems."

## THUMBS UP

Not all Macintosh developers are having the same troubles as Rogers. Rich Siegel is the CEO and founder of Bare Bones Software, which develops and markets a popular text editor. He said that his team has completed the transition with few problems.

Back in September, Siegel told SD Times that Apple "had the OS up and running for so long, and because the fundamental architecture of the OS is different, everything is abstract-

ed. It's much easier to adapt your code for a new CPU architecture because the OS really protects you from all that. I think if they had tried to switch from PPC to Intel back in the

[Mac OS] 8 or 9 days, it would have been a much bigger challenge for a lot of people."

Siegel said that his company has weathered the switch, and gives the process a thumbs up.

"We did all of the initial work up-front. We've gotten really good feedback from the Apple engineers who wanted BBEdit in the transition kit. By itself, it was very straightforward." ■

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## News Briefs

## NEW PRODUCTS

NextApp has announced the availability of its **EchoStudio2** visual development tool and the open-source **Echo2 Web Framework**. The company claims that Echo2 performance is dramatically improved thanks to an AJAX-based rendering engine; EchoStudio2 is based on Eclipse 3.1 . . . Integration solutions developer Iona Technologies and ObjectWeb have reached a third major milestone in the **Celtix** open-source enterprise service bus project. The tool increases its transport capabilities with a complete implementation of HTTP 1.1 and support for Servlet Transport, which permits the movement of remote objects from within a servlet. The project also has added command-line tools for WSDL-to-Java and Java-to-WSDL conversions.



## UPGRADES

Rosebud Management Systems has released **Eden Server 4.0**, a full-featured COBOL/CICS emulator. Eden Server 4.0 has addressed performance issues and provides direct access to all Eden-based CICS transactions via the Web. It also expands batch process capabilities with full support for MVS JCL concepts and constructs, such as in-line procedures, return code checking and batch utilities like IDCAMS and SORT/MERGE . . . Jaluna, co-founder of the Linux Phone Standards (LiPS) Forum, has released **Linux Edition OSware version 2.0** to support the latest ARM9 processor. Features include operating system independence; a unified modem stack for multiple operating systems; and advanced functionality, features and security for consumer applications . . . 4D, maker of software solutions for developing and deploying database applications, has announced the release of **4th Dimension 2004.3**. Enhancements include an integrated mirroring system, which provides backup and recovery for data, debug logging capabilities and numerous bug fixes . . .



**ObjectAda 8.2**, the latest version of ObjectAda Windows for VxWorks on PowerPC processors, has been launched by embedded tools maker Aonix. It includes an enhanced compiler with reduced compile time and a new debugger for Wind River's Tornado 2.x IDE and VxWorks 5.x RTOS . . . Excelsior has released **JET 4.1**, a high-performance Java runtime environment. JET Optimizer translates Java application classes and .jar files into high-performance native executables resistant to reverse engineering . . . Microsoft has released the third Community Technology Preview version of **Vista**. The preview allows Microsoft to gather feedback on the new operating system more quickly. Testers will see new features, including Windows Defender, an update to Windows AntiSpyware; BitLocker Drive Encryption, to protect data on computers when lost or stolen; and tighter control over removable storage devices.

## PEOPLE

**Roy Bedlow** has been appointed VP for Europe, Middle East and Africa at Palm Inc. Bedlow is based at Palm's EMEA headquarters in Wokingham, U.K. He was previously the director of Palm EMEA's Wireless Business Unit, where he was responsible for the Treo family of smartphones and alliances with leading operators throughout Europe . . . **Peter Clare** has joined Apacheta as CTO. He was an early Oracle employee and a member of the senior management team that helped build that company.

## STANDARDS

Object Management Group advanced a number of specifications at its December meeting. The **Business Process Modeling Notation**, which came under the auspices of OMG when it merged with BPMI.org in June 2005, is now in final adoption phase. The CORBA Component Model, with interfaces to control real-time quality of service, completed its member evaluation and started the sequence of votes leading to formal adoption. And, the OMG members initiated an adoption process to update the Common Warehouse Metamodel, a widely used data modeling specification. ■

# Aware of the Needs Of Installation Users

## Experience key to InstallAware update

BY DAVID RUBINSTEIN

Claiming its main competitors' focus has shifted away from installation technology to licensing, InstallAware Software last month released InstallAware 5 for Windows Installer, with support for SQL Server Express 2005 and new scripts for collaboration.

The acknowledged leader in installation software is digital rights management provider Macrovision, after its acquisitions of InstallShield and Zero G Software in the past two years gave it cross-platform capability and a lion's share of the market. But Sinan Karaca, InstallAware's chief architect, said Macrovision's focus "isn't on installers anymore." In a news release announcing InstallAware 5, Karaca said, "Installations themselves have had to take a back seat in their new display of copyright protection technologies, much to the dismay of the setup developer."

Macrovision last month released InstallShield 11.5, with an update that helps developers working apart from one another capture and share installation requirements as they write code.

Karaca said InstallAware 5, first released in April 2004 for

creating installations on Windows, .NET, IIS and SQL Server platforms, improves the user experience with compression, a feature he claimed can reduce the size of an installation by three-quarters. "There's less time loading, and it's a better experience," he said.

The software also allows for what Karaca called partial Web deployment. "Traditionally when you Web-deploy, you put out everything," he said. "The user downloads an empty stub—setup.exe—which connects to the Internet and downloads the main application and all the additional runtimes."

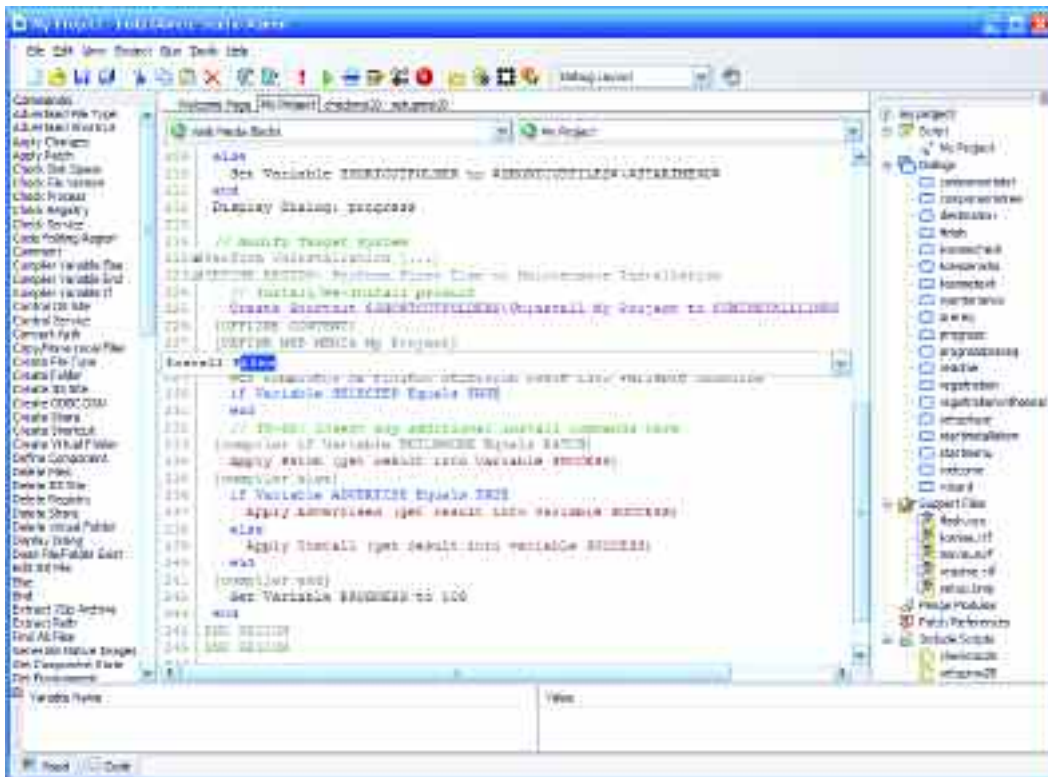
"We believe a Web deployment should be self-contained," he continued. "When you build a setup with InstallAware, you choose what goes in. If you already have a particular runtime downloaded on your machine, why should it be downloaded again and again with each application?"

InstallAware uses genuine scripting for Windows, which Karaca claimed helps Windows Installer work more intelligently. "Say you want a setup to fork while installing—If it's a Windows 2000 system, take a certain path. If not, take a differ-

ent path.' It's extremely hard to do [that] in Windows Installer." Genuine scripting lets developers write a script that allows the setup to perform such actions at runtime, with all actions going through Windows Installer.

Among the new features in version 5 is the ability to install SQL Server Express 2005 as part of a setup, while reducing the runtime to 60 percent of its original size, Karaca claimed. The addition of Include Scripts allows teams to share setup scripts or create a setup library. New Instance Transforms enable the installation of multiple versions of software on the same machine.

InstallAware 5 is available in four editions, starting at US\$199 for the Express edition, a single-user version with a visual setup process. The Developer edition adds genuine scripting for Windows; a Studio edition adds debugging and 14 customizable setup themes with a dialog designer; and an edition called Studio Admin enables users to open existing setups and customize or reverse-engineer them, and to build setups on end-user machines without buying additional licenses. ■



InstallAware Studio Admin lets users customize or reverse-engineer existing installation setups.





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# Seagull Gets CICS Out of Mainframe

## LegaSuite tools wrap transactions for use in Web services world

BY DAVID RUBINSTEIN

While the season for wrapping presents is passed, Seagull Software last month declared an

open season for wrapping CICS transactions as Web services, with the release of its newly integrated LegaSuite for CICS.

LegaSuite is made of an integration server module, a GUI server module and a business process management

engine module, according to Kim Addington, Seagull's executive vice president and chief marketing officer.

"It's middleware from an application stack perspective, but it can sit on the host or on another server in a distributed environment," she said, noting that the software supports native CICS mainframe apps, or can run off the mainframe in distributed environments. She cited BEA's WebLogic and IBM's WebSphere application servers as well as NetWeaver and middleware from Sun (SeeBeyond), TIBCO and WebMethods as environments in which LegaSuite can be placed. Addington said her company has even had calls from customers that want to wrap client/server functions from the .NET environment into callable Web services.

Addington said Seagull believes the industry is at an important point in terms of the adoption of service-oriented architectures, but added that dealing with legacy systems has been an impediment. "With LegaSuite, you can publish a legacy service in one day with no code," she claimed. Other integration vendors require a significant amount of coding to tie to legacy systems, and then only provide access to the data, Addington asserted. LegaSuite, with its BPM engine, can help businesses clear stacked-up change orders and provide an audit trail, tracking, logging and approval without changing anything in the underlying application, she said. The suite also includes modeling tools so business analysts can design the processes.

LegaSuite takes the CICS transaction, ignores the presentation layer, wraps the information for input and output, and publishes it as WSDL description, XML, a Java bean or a .NET component, said Ardy Franssen, vice president of product management. For CICS transactions that need a screen layer, LegaSuite can use the screen's input and output formats as a means to access the host data, she explained.

License fees for LegaSuite development tools range from US\$5,000 to \$18,000; the runtime software price is determined by the platform, starting at \$50,000. ■

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# Not Just for Rational: Essential Unified Process

Ivar Jacobson

## A UML 'amigo' discusses the lighter, platform-agnostic version of RUP he is developing

BY JENNIFER DEJONG

Best known, along with Grady Booch and James Rumbaugh, as one of the "Three Amigos" who co-invented the Unified Modeling Language, Ivar Jacobson announced late last year that he is developing the Essential Unified Process. Recently, SD Times spoke to Jacobson about his work.

### SD Times: What is the Essential Unified Process?

**Ivar Jacobson:** It makes use of experience and knowledge gained from RUP. But everything that is not absolutely necessary goes away. We don't reuse any of the material. We throw away everything that is heavy.

### Can you give me an example of something that is heavy?

For example, RUP includes thousands of pages [of guidance and knowledge]. But people don't read it; it's too much for people to think about. Essential will include no more than 200 pages. It will keep the core ideas of RUP. [A concept known as] intelligent agents will also play a role. They will deliver pages only as you need them. They

work as virtual mentors.

### What are the core ideas of RUP?

There are five: components; models; iterative and incremental; architecture; use cases. [RUP is based on] components and models. It is iterative and incremental, and it is architecture and use-case driven. If you focus on architecture early in the life cycle, there is less need for refactoring. When you identify use cases up-front, they give an automatic project plan.

### In late November you announced plans to deliver Essential UP for Visual Studio Team System. But Essential UP isn't designed solely for Microsoft developers, is it?

No. It is generic knowledge that can be instantiated in different platforms.

### Is Jaczone [the software company Jacobson co-founded with his daughter Agneta in 2000] or any other company working on a version of Essential UP for the IBM Rational Software Development Platform?

We want to spread the core practices that will be part of Essential Unified Process as widely as possible to help the many organizations that may benefit from them. Thus, we have partnered

with Microsoft to make them available to the .NET world. We have also partnered with IBM to make the part of RUP that they donate to Eclipse (called Basic UP) as successful as possible.

### When do you expect to deliver the Essential UP for Visual Studio Team System?

We are targeting to release at the end of the first quarter of 2006, or the beginning of the second quarter.

### Can you describe the typical architect/developer that is likely to use Essential UP?

I first have to be cautious about the word "typical." But I would say that 50 to 60 percent of the projects that will use the Essential Unified Process could be described as typical. A typical project has a team of five to seven people and a length of six to nine months. The typical project is an application on top of a well-known platform, including middleware. However, the Essential Unified Process will be designed to also work well for new creative solutions, such as developing intelligent agents to support a banking application.

**Some members of the UML community have said the language has grown too large, noting that most architects/developers use only a few of the diagrams. Others point out that UML is solving**



**extremely complex problems, and its broad scope is therefore necessary. Where do you stand on this issue?**

I used to say that 80 percent of all projects need just 20 percent of UML. I think UML 1.1, which was designed back in 1997 by a team including Grady Booch, Jim Rumbaugh and myself, was quite good. It needed to stabilize for several years before it went through a major redesign and extension, which

► continued on page 24

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# Compuware Revs Up CARS, QACenter

Adds ability to run tests from Web, integrate with other RM offerings

BY JENNIFER DEJONG

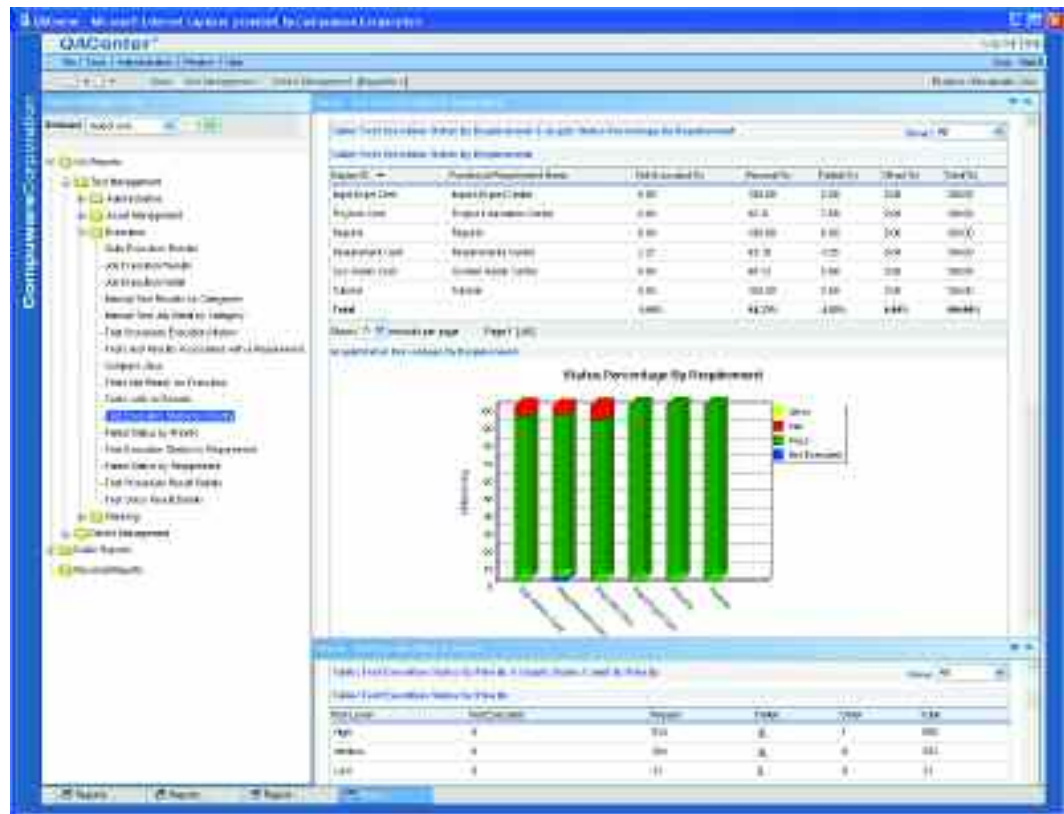
Compuware continues to soup up its CARS and other quality assurance offerings.

The Detroit-based company last month announced version 5.1 of both CARS and QACenter Enterprise Edition. New to both is the ability to build and execute test scripts from a Web browser, and to integrate with requirements management tools from Borland, IBM, SteelTrace and Telelogic, said Mark Eshelby, quality solutions product manager for Compuware.

QACenter Enterprise Edition, which starts at US\$8,000 per user, includes Compuware's Reconcile requirements management tool and provides automated testing, test management and defect tracking capabilities for QA

teams. CARS includes QACenter, methodology and best practices advice, and also delivers key quality metrics to line-of-business executives. Unlike the previous release, CARS 5.1 incorporates ChangePoint, Compuware's tool for managing IT projects and costs. CARS is sold on a subscription basis, but Compuware did not specify pricing.

Enabling testing professionals to use QACenter from the Web is essential for geographically distributed teams, asserted Eshelby. In the past, firewalls made that difficult to do. Integration with other tool makers' requirements offerings lets business users see, for example, which features of an e-commerce application are passing QA tests and which ones are failing. "If there's a 50



QACenter 5.1 helps teams manage testing efforts, prioritizing tests and estimating how long they will take.

percent failure rate on the shopping cart, the business user can see that," he said. In the past, that was possible only if requirements were captured in Compuware's Reconcile.

Also new to QACenter and

CARS is the ability to calculate how long an individual test, such as totaling the cost of items in a shopping cart, will take, said Eshelby. The time estimation capability extends an earlier feature, which lets

teams specify which tests take priority, and which ones can wait. Better test planning is key in "the business and technical environment, where there are lots of dynamics at work," said Eshelby. ■

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# Study Reveals Trust in Homegrown Apps

◀ continued from page 5

IT department has given up the fight to make it adequate. Management will not buy into more than half-measures (e.g. anti-virus software and a hardware firewall) after they have been

hit over the head with the need for it." Given the sensitive nature of this research topic, all names and companies are being treated as confidential.

Another respondent commented, "Security testing varies

from one project to another depending on who is involved and the risk potential. Software developed for some projects is quite secure, while software for other projects may have minimal security testing."

The respondents had higher confidence in the security of software written for internal consumption by their own staff than software written by contractors, or purchased as packaged applications. When asked

how secure internally developed applications were, 57.4 percent called them "totally secure," "very secure" or "secure." But when asked about applications written by contractors, consultants and outsourcing services, only 42.3 percent characterized them with one of those three ratings. When asked the same question about mission-critical off-the-shelf or packaged applications licensed by the respondent's company, such apps were judged secure by 52.1 percent of respondents.

What types of software testing do companies perform? Nearly three-quarters said that their organizations perform password/authentication testing. Just more than half also perform manual code reviews or walkthroughs, and also perform network testing. About 42 percent said they perform a risk assessment, and about the same number do Web services testing.

Specific threats weren't always tested against. Slightly less than a third test for the SQL injection vulnerability and even fewer look for buffer overflows.

"We don't do enough intrusion testing. We tend to test for authentication, but not intrusion," said one respondent. Another said, "We could do a lot more, we have the expertise, but our customers are not willing to pay the extra price."

Finally, when asked where they expect to see their companies investing in software security over the next 12 months, close to half said they expect to purchase tools for assessing software security, and more than 40 percent said they would be adopting more secure development methodologies and acquiring testing tools for improving software security. A focus on programmers came in lower, with only 38.1 percent saying they'd invest in software security training for programmers, and 35.4 percent saying they would acquire development tools that would help with improving software security services.

What about looking outside the organization? Not an option, most respondents said. Fewer than 1 in 5 expected to use external services for testing or assessing software security; 16.7 percent would hire consultants to assist with improving software security; and 12.9 percent would use external services to improve software security. ■

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# Web Tools Platform 1.0 Ready for Extension

BY ALEX HANDY  
AND EDWARD J. CORREIA

The Eclipse Foundation in late December released version 1.0 of the Web Tools Platform—its environment for developing

J2EE Web applications—declaring it stable enough for full commercial deployment.

The release is the first major update to the software since version 0.7 was shown at

JavaOne in early 2005.

According to Eclipse Foundation director of marketing Ian Skerrett, the tools themselves were stable at that time, including those for JavaScript,

WSDL, JSP, HTML, CSS, SQL and XML. “But the team wanted to spend more time on the frameworks and on crisping up the APIs,” said Skerrett. The platform API is now suitable for

extension by third-party developers, he claimed.

Tim Wagner, senior development manager at BEA Systems and the Web Tools Platform project committee lead, said that the committee and the vendors behind it hope to make WTP the de facto standard for Web application development environments.

Of the future, Wagner said the next steps will be to enhance the development tools, componentize WTP features to enable subsets to be selected and deployed, and keep pace with the release of Eclipse version 3.2, code-named Calisto, planned for June. Other goals include major documentation and help system contributions from IBM, important bug fixes and performance improvements. A service pack to contain version 1.5 is set for February.

In addition to BEA and IBM, major contributors to WTP include JBoss, ObjectWeb and Oracle. ■

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## Geronimo App Server Hits 1.0

< continued from page 1

ication to the Geronimo project, he had trouble pinpointing solid reasons to prefer Geronimo to another open-source app server—JBoss. “Until recently,” said Sundstrom, “we had one big feature over JBoss, which was the transaction manager, but they closed that [gap] by purchasing the Arjuna one. The JMS implementation we use is far superior to the one in JBoss. One of the guys who wrote the ActiveMQ that Geronimo uses wrote the JBoss one, and learned from all of his mistakes.”

Sundstrom said that the biggest single differentiator between the two is the licensing. “All the software released from Apache comes under the Apache Software License, which makes it easy for ISVs and commercial organizations to be able to redistribute [code] and add their value-adds.” JBoss is shipped under the Lesser GPL, which Sundstrom called “one big political hot potato.”

But that doesn't mean that the Geronimo team isn't trying to stand out from the crowd. “Geronimo ships with a benchmark called Daytrader. We're very focused on performance benchmarks. I think it's a place where we'll actually be able to differentiate with the competition.” ■



# Companies to Spend \$6 Billion on SOX Compliance

◀ continued from page 1

instance, an employee who has the authority to create a purchase order is not also allowed to issue payment. Proving such checks and balances exist is critical to complying with the Sarbanes-Oxley Act of 2002, he said.

Continuous-controls monitoring software is used by CEOs to ensure that such controls are working. "The software uses a series of analytical tests to determine whether a control, such as 'all invoices over \$50,000 must be approved by a manager at a certain level,' has been complied with," said Verver, offering an example. Such systems look not only at individual transactions, but also at patterns. If an employee has issued seven purchase orders at \$49,000 each, the CEO needs to know that, said Verver.

## NOT AS EXPECTED

Three or four years ago, when companies began formulating Sarbanes-Oxley strategies, many anticipated that developers would play a key role in compliance efforts. But things haven't shaped up that way, said Verver. Initially, there was a big focus on building auditing controls into existing systems such as those for enterprise resource planning or business process management. That approach would have required significant input from developers. "But that hasn't happened," he said.

The presence of controls in software designed for other tasks doesn't necessarily prove compliance, and can also get in the way of doing business, he said. What's more, top executives need to own the systems that manage compliance efforts.

In addition, there has been a shift in mindset, where senior executives have begun to see Sarbanes-Oxley and other compliance initiatives as ongoing

efforts, not simply as this year's project, said AMR's Hagerty. "Companies complied last year. They will comply this year." Compliance and monitoring software provide financial man-

agers and senior executives with the tools to do that, he said.

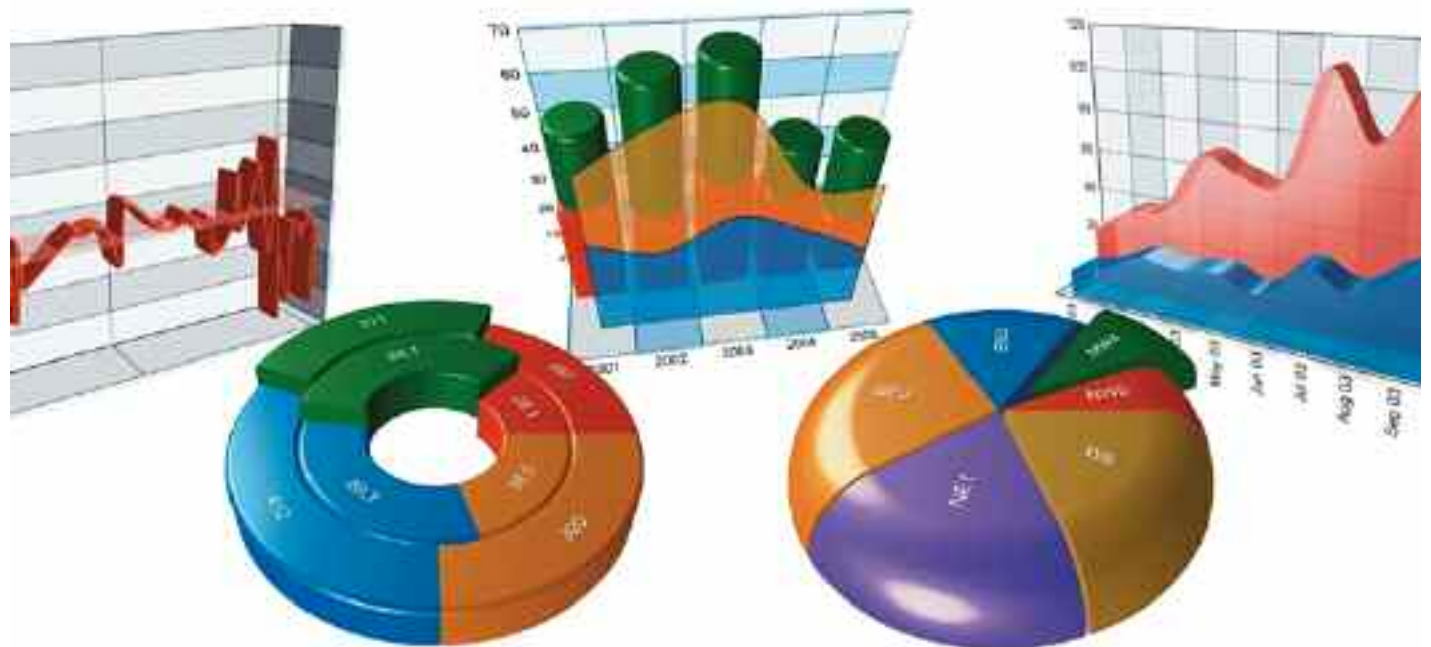
But spending patterns will change this year. The survey found that internal labor and head count will account for 39

percent of total 2006 SOX spending, a drop of 8 percent from 2005 spending, while the \$1.9 billion to be spent on technology represents an increase of 13 percent. External consulting,

however, excluding fees for financial auditors, will remain steady at 29 percent. AMR was expected to make available further survey results earlier this month. ■

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# Ruby on Rails Gains Head of Steam

◀ continued from page 1

lot of promise," said open-source analyst and Navica CEO Bernard Golden. "They give you a lot of the infrastructure: My term would be they give you a lot of the plumbing. Rather than

creating all the connections, it just delivers all that. It gives you a huge leg-up in building your prototypical database-driven Web site."

Richard Monson-Haefel, a senior analyst at the Burton

Group, has just completed a 30-page report on Ruby on Rails. He said Ruby is an excellent evolving technology that should be considered by organizations searching for new Web frameworks.

"It offers a very strict Model-

View-Controller model," he said. "But it gives you the ease of development a lot of people associate with PHP. It's much easier to maintain than a complex PHP script or a simple J2EE program. J2EE is notori-

ously complex, and PHP can be tough to maintain because it doesn't have a good MVC. It's very good for developing Web applications very quickly."

Monson-Haefel pointed out some of Ruby on Rails' shortcomings, which are primarily database-related. "1.0 of Ruby on Rails did not support compound primary keys [common in relational databases] and has no support for legacy databases."

He said the framework also lacks support for two-phased commit. "If you're making changes to two databases and you want them both to roll back at the same time, it doesn't support that. Only 10 to 15 percent of Web applications need that."

One Web site that has moved to Ruby on Rails is the popular comic site Penny Arcade (www.penny-arcade.com). Webmaster and system administrator Erik Karulf said that when new comics come out three times a week, Penny Arcade can receive an average of 700 unique hits a second. Prior to the Ruby on Rails transition in November, Penny Arcade was a PHP/MySQL-based site.

"The poor MySQL server just couldn't keep up," said Karulf. "The first thing we did when we switched to Ruby on Rails was standardize the template and header and footer, and it's made my life a lot easier." The entire site, he said, takes up about 1,200 lines of code.

## 'UNSUNG HERO'

Karulf also has transitioned Penny Arcade to another piece of technology that the Ruby on Rails community advocates: Lighthttpd. "The unsung hero of Penny Arcade right now is Lighthttpd. The site generates the page files once. To do that in Ruby on Rails took me two lines of code. The scaling is amazing on static files."

Lighthttpd is a smaller alternative to Apache, and is one of the two Web servers supported by Ruby on Rails.

Monson-Haefel recommends Ruby on Rails to his clients. "We tell companies that it's very productive," he said. "We recommend it for department-level Web applications and for small start-ups, but not for mission-critical super-high transaction processing. The ecosystem is a little anemic in that the number of libraries and the types of solutions that can be added on top of Rails aren't there." ■

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The Tablet PC is the evolution of the notebook PC. Designed to meet the mobile demands of enterprise users, Information Technology (IT) profes-

sionals, and end users alike, the Tablet PC offers the full power and functionality of today's notebook PC—with no sacrifices. Powered by a superset of Microsoft® Windows® XP Professional, Tablet PC offers the robust features and security technologies in Windows XP Professional plus additional pen-based functionality. With a Tablet PC, you can use your computer in new and different ways—whether in the office, in a meeting, or on the go.

**Tablet PCs** are optimized for your organization's mobile-computing needs and designed to let you stay connected to customers, colleagues, and critical information in real time, most anywhere your work takes you.

Microsoft Office System extends the capabilities of the Tablet PC with deep pen and ink integration into existing software like Microsoft Word and Microsoft OneNote®, where you can bring ink, text, and Web content together in one program. OneNote and the Tablet PC turn note-taking into information management. You can save time by using your Tablet PC to perform such tasks as sharing notes with peers, electronically assigning action items from meetings, and turning notes directly into summary reports for distribution in e-mail. Ink is a first class data type similar to text—users need not convert ink notes into text. Because recognition occurs in the background, though, users can search and sort ink notes as readily as text. Users become more productive, saving time each day by keeping notes as ink.

#### Enhanced Ink-to-Text Experience—

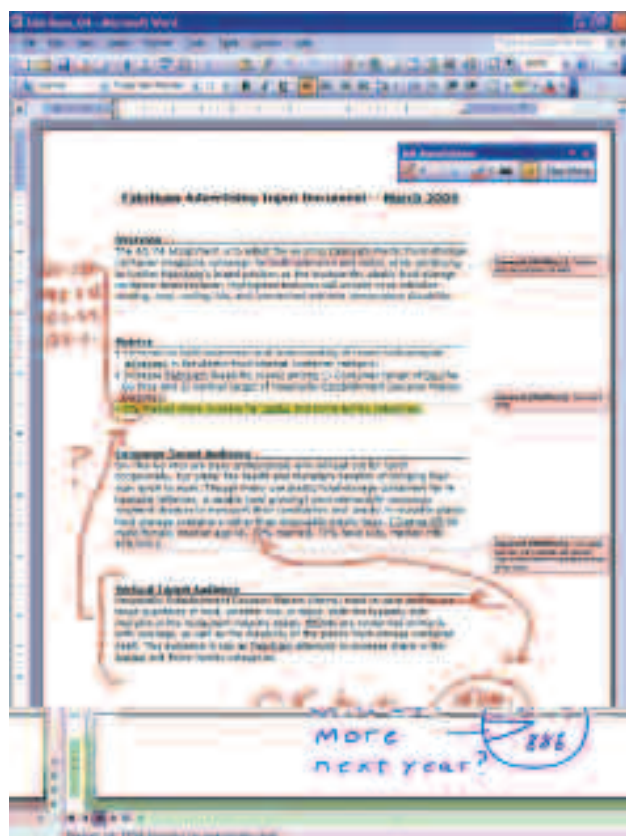
Because there are times when you do need to convert handwriting, Windows XP Tablet PC Edition 2005 introduced Tablet PC Input Panel, which makes it quicker and easier to convert

ink to text. With Windows Vista™, Microsoft and our hardware and software partners continue the investment with more pervasive support for ink, new-generation hardware, a wealth of new features, and third-party software applications. You can learn more about Windows Vista at [www.microsoft.com/vista](http://www.microsoft.com/vista).

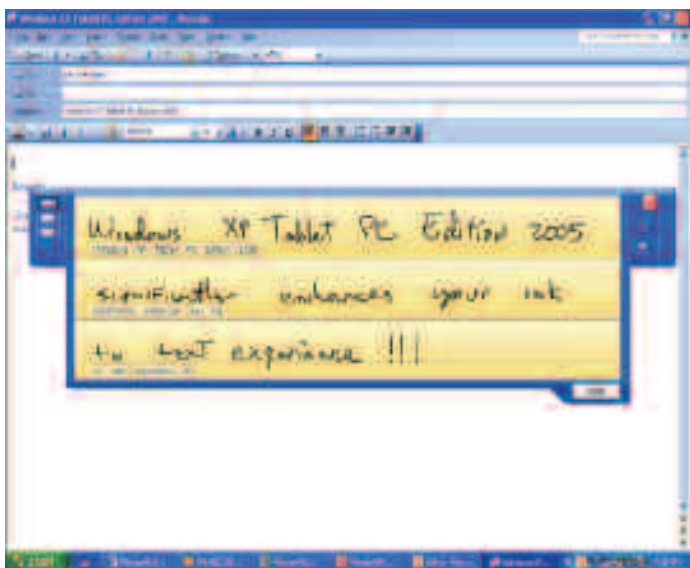
**The Ultimate in Power, Mobility, and Versatility**—The Tablet PC is everything you need in one lightweight package, providing the power, mobility, and versatility your workplace demands. The Tablet PC is truly one of the most unique PCs ever, giving you pen-based digital access to the information you use every day, from almost anywhere you happen to be. Tablet PC features include:

- Advanced power management for long battery life.
- Built-in, zero-configuration wireless capability.
- Lightweight design for easy carrying.
- Grab-and-go docking.
- Fast resume from Standby, for quick access.
- The ability to convert handwriting into text and insert it into applications.
- The capability to search both handwriting and text together.
- Inclusion of diagrams, charts, graphics, and drawings into notes.
- Easy use of business forms by using the tablet pen to enter data.
- Quick navigation with the tablet pen.
- The ability to collect digital signatures.

Like all laptops, the Tablet PC offers a complete desktop computer solution. Support for keyboards and other common peripheral devices—such as external monitors, speakers, and multimedia devices—also make the Tablet PC the ideal







choice for a primary desktop computer. Of course, you can customize a Tablet PC with a variety of applications available from industry-leading software vendors. For more information about features and the specialized vendor software, see [www.tabletpc.com](http://www.tabletpc.com).

**Compatibility with Existing Windows XP-Based Programs**—Windows XP Tablet PC Edition 2005 offers deep ink integration in familiar programs, such as those found in the Microsoft Office System. You can add ink comments to Word documents, annotate Microsoft Office PowerPoint® presentations, take digital notes in OneNote, and send ink e-mail messages to coworkers and friends. In fact, any application that runs on a Windows XP computer also runs on Tablet PC. You can also share your handwritten notes with other computer users—even if they are using a computer other than a Tablet PC. In addition, Tablet PC offers support for a host of third-party programs that specifically enable you to optimize ink capabilities.

**Simplified Enterprise Deployment** — Because Windows XP Tablet PC Edition 2005 is a superset of Windows XP Professional, Tablet PC offers the security, reliability, and large-scale deployment capabilities of Windows XP Professional.

In addition, Windows XP Service Pack 2 (SP2) offers security enhancements for increased protection for the Tablet PC. All current Tablet PC models have Windows XP Tablet PC Edition 2005—including Windows SP2—preinstalled by OEMs. For more information about deploying Windows XP Tablet PC Edition 2005, see *Deploying Microsoft Windows XP Tablet PC Edition 2005* on [www.microsoft.com](http://www.microsoft.com).

**Seamless Management**—Manage Tablet PCs just like other Windows XP-based computers. Tablet PCs provide Active Directory® directory services, remote assistance, and all of the network-  
ing support of Windows XP Professional. Windows XP Tablet PC Edition 2005 also has more than 300 policies that tailor the operating system to the enterprise environment.

**Support for the .NET Framework**—Windows XP Tablet PC Edition 2005 is designed in accordance with the Microsoft .NET Framework, which ships with every copy of Windows XP Tablet PC Edition. It includes the common language runtime, which is at the foundation of the .NET Framework. The common language runtime is an agent that manages code at execution time, providing core services, such as memory and thread management, while enforcing the strict safety and accuracy of the code.

**Powerful Development Platform**—Windows XP Tablet PC Edition 2005 is a powerful platform for developers who are interested in integrating pen, ink, and speech functionality into new or existing programs. Developers can leverage their existing knowledge, hardware, software tools and Microsoft Visual Studio® to develop ink-enabled applications. And many developer tools—including the Microsoft Windows XP Tablet PC Edition Development Kit 1.7—are available for download at The Tablet PC Developer Center, [msdn.microsoft.com/tabletpc](http://msdn.microsoft.com/tabletpc).

## **A More Powerful Work Environment—**

The sum total of all this is that Tablet PCs are ideally suited for business users who spend much of their day away from their desks—either on the road or in meetings—yet need access to their information at all times. The lightweight design, versatility, support for wireless connectivity, and docking support enable mobile workers to stay productive wherever they are throughout the day. The compatibility of Tablet PCs with existing software and support for Windows XP deployment resources creates straightforward deployments and seamless management of Tablet PCs in corporate environments. All this adds up to more productive employees, easier resource management, and the realization of more potential.



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# Vendors Back Language-Neutral SCA Spec

◀ continued from page 1

some existing object and generate the XML needed for the interface and the messaging. "But that doesn't always give you the granularity to map to

the business services that you need at the business level." SCA closes that gap, he said, by abstracting the low-level APIs that Java or C++ developers would otherwise have to code

directly to specs such as JAX-RPC and WS-Addressing. "Java developers spend a lot of time coding to these specs. SCA promises to provide a metadata-based approach that will

generate a lot of that low-level code for developers." Newcomer said SCA will be proposed as an Eclipse project.

But while enthusiastic about the effort, Mark Neuhaus, vice

president of Java Web services at Sun, expressed caution about stepping on prior work. "From a Sun perspective, SCA is an important next step for the community; building a component architecture for sharing artifacts is a good thing. But it also should rely on previous work and extend it to the next level."


Some of that previous work, he said, was done as part of the Java Business Integration specification (JSR 208). "In the evolution of Web services toward service-oriented architecture, you built on standards: XML, WSDL and WS-\*. Eventually you have to be able to describe what a set of Web services are, so you get a Web services descriptor."


In a statement released just after the SCA announcement, IT research firm Gartner characterized the endeavor as "an attempt to combat one aspect of Sun's [JBI] effort by delivering a programming model for SOA—a non-Java-specific, metadata-driven model that describes the composition of services...[that are] independent of interoperability protocols."

Newcomer said that while there are similarities, he disagrees with the basic premise that JBI is redundant to SCA. Iona contributes to both projects. "JBI does provide a service interface for components, and there are common aspects such as the Web services descriptor."

The main difference between JBI and SCA, he said, lies in their intended purpose. "JBI looks to break apart EAI solutions and standardize assembly of integration components, and so any vendor can put together a best-of-breed solution" using components from multiple vendors, he said. For example, a transformation engine from one vendor could be joined to messaging middleware from another. "SCA is focused on helping the enterprise developer create SOA software at the application level."

"JBI is, in part, for connecting systems," countered Neuhaus. "But it's also for expressing them as services in a SOA." But Neuhaus conceded that SCA will attempt to accomplish more than what JBI was about. "Trying to define a more comprehensive component architecture for SOA apps, that's fine. We would love to join as a co-author and bring our IP and expertise to help it be successful. But we have not been offered that opportunity." ■





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# SpeedDEV Breaks Into Life-Cycle Management

## Kovair merger bears document management, collaboration fruit

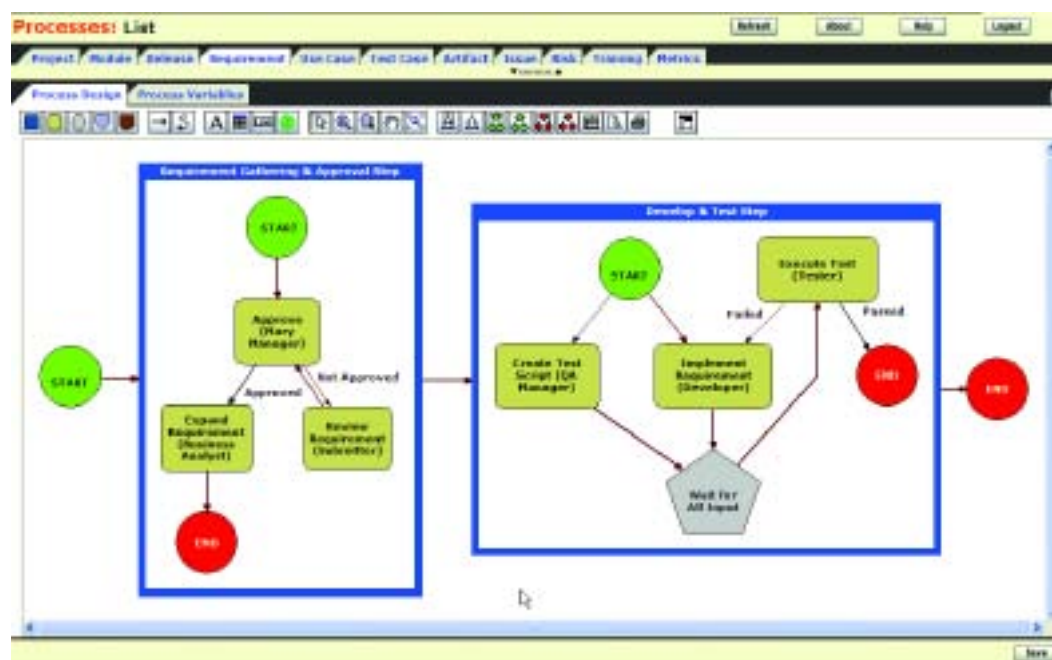
BY DAVID RUBINSTEIN

SpeedDEV, a company that once focused only on requirements and issue management, is looking to crack into application life-cycle management with the completion last month of its merger with Kovair and the release of version 4.5 of its namesake platform.

Kovair provides SpeedDEV with document management and collaboration capabilities necessary for an ALM solution, according to SpeedDEV CTO Sky Basu. With the new release, development organizations can store such assets as requirements, use cases, test cases and test plans, and defect-tracking information in a single repository, Basu said. Also, SpeedDEV 4.5 enables organizations to set up their own custom assets, such as those required for help desk,

Capability Maturity Model integration and IT management. Examples would be supplier agreements or entry validations. The platform, which runs on Microsoft SQL Server and uses the .NET Framework in the middle tier, is accessed via a browser so any group or location can work with the assets, which Basu said can help facilitate multisite or outsourced development.

In the SpeedDEV interface, asset categories, such as requirement or test case, appear in a tree list. Selected categories yield an itemization of the assets in that category in a window next to the list; clicking on a specific item presents that item in a window beneath the itemization. There is a form designer for the bottom window so that each group that needs to access the informa-



The Visual Process Designer enables creation of graphical workflows that can help enforce development rules.

tion can see it in whatever way they wish, Basu said.

Other new features in version 4.5 include a workflow process engine that enables organizations to automate their development methodologies,

ensuring applications are created in accordance with whatever rules are in place, Basu said.

Also new are the ability to trace multiple asset types across applications and report on them, and the ability to synchronize workflows across entities. "For example, you might have a release with 20 requirements and 50 bugs. You might say that you can't start integra-

tion testing until unit testing is finalized for requirements and issues," Basu said.

SpeedDEV has added a SOAP-based API to the platform to enable companies to create their own user interfaces, or to bring in and share the SpeedDEV assets via an enterprise portal, Basu said. The API also enables integration with third-party tools and legacy systems, he added. ■

## S-3 Takes Holistic Approach to Security

BY ALAN ZEICHICK

The second annual Software Security Summit will take a broad, holistic view of application security, embracing the topic not only as a testing and quality assurance imperative, but also as a key design goal for architects and programmers.

The conference, scheduled for Feb. 6-8 in San Diego, will feature keynote addresses from Gary McGraw, CTO of security software company Cigital; and Peter Coffee, respected technology columnist for eWeek, a newsweekly published by Ziff-Davis International. McGraw, author of "Exploiting Software," "Building Secure Software" and the upcoming "Software Security," will discuss how to design security into the application from its earliest stages. Coffee will focus on the attitudes behind writing secure software in his keynote, "Mediocrity is Malpractice!"

Registration for the 2006 Software Security Summit is running 45 percent above last year's attendance, said Ted Bahr,

president of BZ Media, which owns and produces S-3. (BZ Media also publishes SD Times.)

The three-day conference begins with one full day of tutorials, covering how to integrate security into the application development life cycle, writing secure .NET applications, writing secure Java/J2EE applications, and secure coding in C/C++. The second and third days consist of dozens of in-depth classes that cover management issues, specific hacker exploits and code vulnerabilities, cryptography and best practices for developing better software.

New classes for 2006 include "Developing Bullet-proof Web Applications" conducted by Govind Seshadri; "Safer Strings in C: Using the Managed String Library" by Robert C. Seacord; "Application Defense—Software That Fights Back" by Arthur Do; "Auditing Code for Identifying Security Problems" by Bob Fleck; "Everything You Know About Crypto Is Wrong" by John Viega; "Defeating Rootkit



**CONFERENCE:**  
Feb. 6-8  
Hyatt Regency La Jolla  
San Diego

**TUTORIALS:**  
Monday, 9:00 am-5:00 pm

**CLASSES:**  
Tuesday, 8:45 am-4:15 pm  
Wednesday, 9:30 am-5:15 pm

**EXHIBIT HOURS:**  
Tuesday, 2:30 pm-7:30 pm  
Wednesday, 12:45 pm-4:00 pm

**KEYNOTES:**  
Tuesday, 4:30 pm-5:30 pm,  
Gary McGraw  
Wednesday, 8:30 am-9:15 am,  
Peter Coffee

[www.S-3con.com](http://www.S-3con.com)

Backdoor Attacks" by Greg Hoglund; "Secure Coding Techniques for Internet Applications" by Jim Maloney; and "Seven Pernicious Kingdoms: A Simple Taxonomy of Coding Errors" by Gary McGraw.

The Software Security Summit also includes an exhibition hall open for two days. Fortify Software is the diamond sponsor of S-3; Kenai Systems and Secure Software are platinum sponsors; and Ounce Labs and Parasoft are gold sponsors of the conference. ■

## Essential Process

◀ continued from page 12

happened with UML 2.0. We should have sought help from the many excellent people with background in formal language design to make sure that we had removed inconsistencies and streamlined the design. UML can model very complex software, but the more advanced features should have been separated from the 20 percent and presented in an aspect-oriented way, as we will do with the more complex extensions to Essential Unified Process. The extensions must not complicate the base.

**Do you consider Essential UP an agile methodology?**

Yes, absolutely. This is one of the preconditions for our work. Agile, with discipline.

**Microsoft has earlier described its modeling strategy as "UML and more." Do you agree with that characterization?**

Frankly, I don't know. However, since Microsoft can stand on top of the work done on UML, [the company] should have learned

from the UML experience. I have worked with modeling languages since [the] late '60s. Over the years, I have seen people take two different approaches. You can call it the centralized or the distributed language approach. The centralized approach was taken by SDL [Specification Description Language] and UML, a common meta-model for the whole language. The distributed approach has been taken by several larger telecommunications companies. It basically means that you have different kinds of languages for different kinds of problems. Thus, I have seen different languages for different businesses and for different disciplines, such as business modeling, requirements, architecture, testing, etc. You can call them domain specific languages—a term that was used at Ericsson back in 1990. In principle, both approaches work well, but they require rigorous, different language design practices. ■





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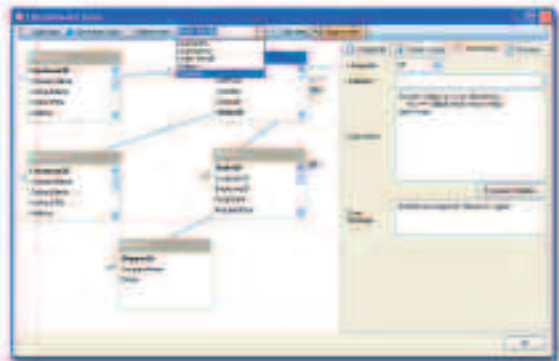
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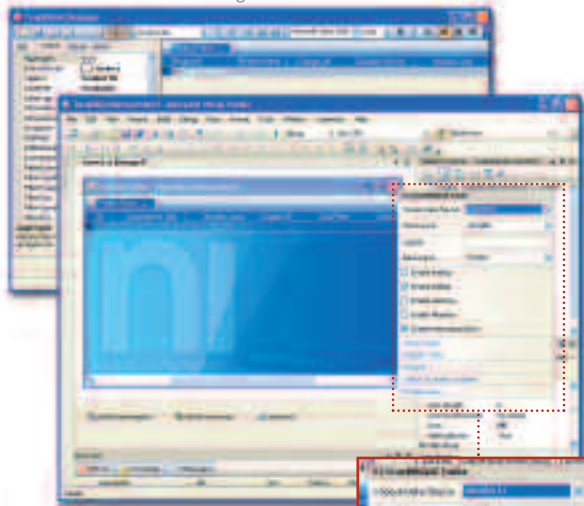
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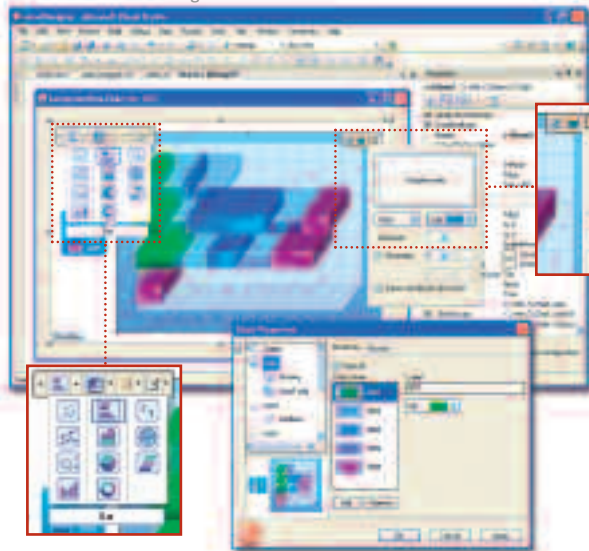
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# Under Adobe, Flash Lite 2 Is No Lightweight

First release of runtime for mobile devices since Macromedia acquisition adds XML parser

BY EDWARD J. CORREIA

Having completed its acquisition of Macromedia in December, Adobe Systems on Jan. 5

began shipping Flash Lite 2.0, the latest version of the runtime for mobile devices that the company claims now includes Flash

Player 7 and JavaScript compatibility, and an XML parser for local handling of data.

An updated development

environment can now emulate the runtime's 210 supported mobile devices, including 98 handsets from 11 manufactur-

ers, the company says.

Most significant among the advances, according to Anup Murarka, Adobe's senior director of technical marketing, is its ability to parse XML data locally. "Now XML data sources can be brought into an active experience," which he said gives developers the ability to manipulate and include Web-based content such as RSS news feeds and enterprise data in their layouts.

And while local XML processing can be a burden on the limited resources of a mobile processor, he said the capability also can help reduce the amount of data being transmitted, which in turn saves on wireless network costs. "XML parsing also enables use of SVG content, which is based on XML," he said, referring to Scalable Vector Graphics common to many Web sites.

Flash Lite 2 now supports ActionScript 2, Macromedia's application scripting language that is based on the ECMA 262 specification, which grew out of JavaScript.

He added a qualifier: ActionScript can process some JavaScript commands but is not fully compatible. "Typical script [commands] that you might see on a desktop are not necessarily going to exist on a mobile phone, like OpenWindow. And there are things we've changed to support animation."

## GROWTH OF FLASH LITE

Murarka said the improvements reflect the growing use of Flash Lite. In early 2004, when Symbian co-founder Juha Christensen was hired by Macromedia to run its then-new Mobile and Devices division, the number of cell phones with Flash Lite preinstalled was near zero. Today that number is at about 45 million, according to Murarka. Christensen left Macromedia about a year ago.

Murarka said the Macromedia brand will remain on some products. Mobile and desktop developers use the same environment, Flash Professional 8; a free update for Flash Lite 2.0 is available to licensed users at the Macromedia Labs Web site. A beta of the Flash Player 7 SDK is available now; release is set for February. ■



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# A New Company Promotes Proven Software

Component repository is designed to spur reuse in devices and save developers time

BY EDWARD J. CORREIA

Proven Software Solutions is not only its name, but also what the company claims to offer. According to one of its founders, the U.K.-based start-up is built on the premise that embedded developers spend most of their time working on proprietary software that adds no unique value to their designs.

"Rather than having engineers developing drivers, which do nothing to differentiate a product, your engineers can be working on things that do differentiate your products," said Proven Software CEO and co-founder Chris Briggs.

To that end, the company late last year made available a repository of embedded software components—drivers, protocol stacks and the like—that have been contributed by embedded developer partner companies. The components have been developed, tested and debugged by the contributors, and have been either deployed widely in commercial devices or running reliably for a lengthy period, or are certified to be compliant with a widely used industry specification.

"If [someone buys] something from us, they're getting something that is proven to work and is much cheaper in terms of cost and development time," claimed Briggs. "It also saves them debugging and testing time because we only take products that have been proved to work in a product," something, he said, that can potentially cost tens of thousands of dollars to develop.

Briggs said that components, which are categorized in the repository by function, target architecture, language and operating system, cost between a few hundred and a few thousand dollars, some of which goes back to the developing company. "Otherwise, once you've developed and archived [a component], it does nothing more for you. This way [developers] can realize revenue from that asset in licensing sales." He called the component prices competitive compared with developing in-house. There are no royalties.

To date, AMD, Intel, Renesas and Toshiba have contributed about three dozen components, mostly operating system-independent C-language device

and interface drivers. Briggs claimed that several major U.S.-based embedded software companies have expressed interest in partnering, but

would not specify which ones.

Each component is accompanied by a data sheet that describes how the component has been used in the field, its

benefits, the API (if applicable), and of course, source code. Briggs noted that while components have been proven to work in their original hardware, they

will require modifications to work with other designs.

The repository is available now at [www.proven-software.com/Software.asp](http://www.proven-software.com/Software.asp). ■

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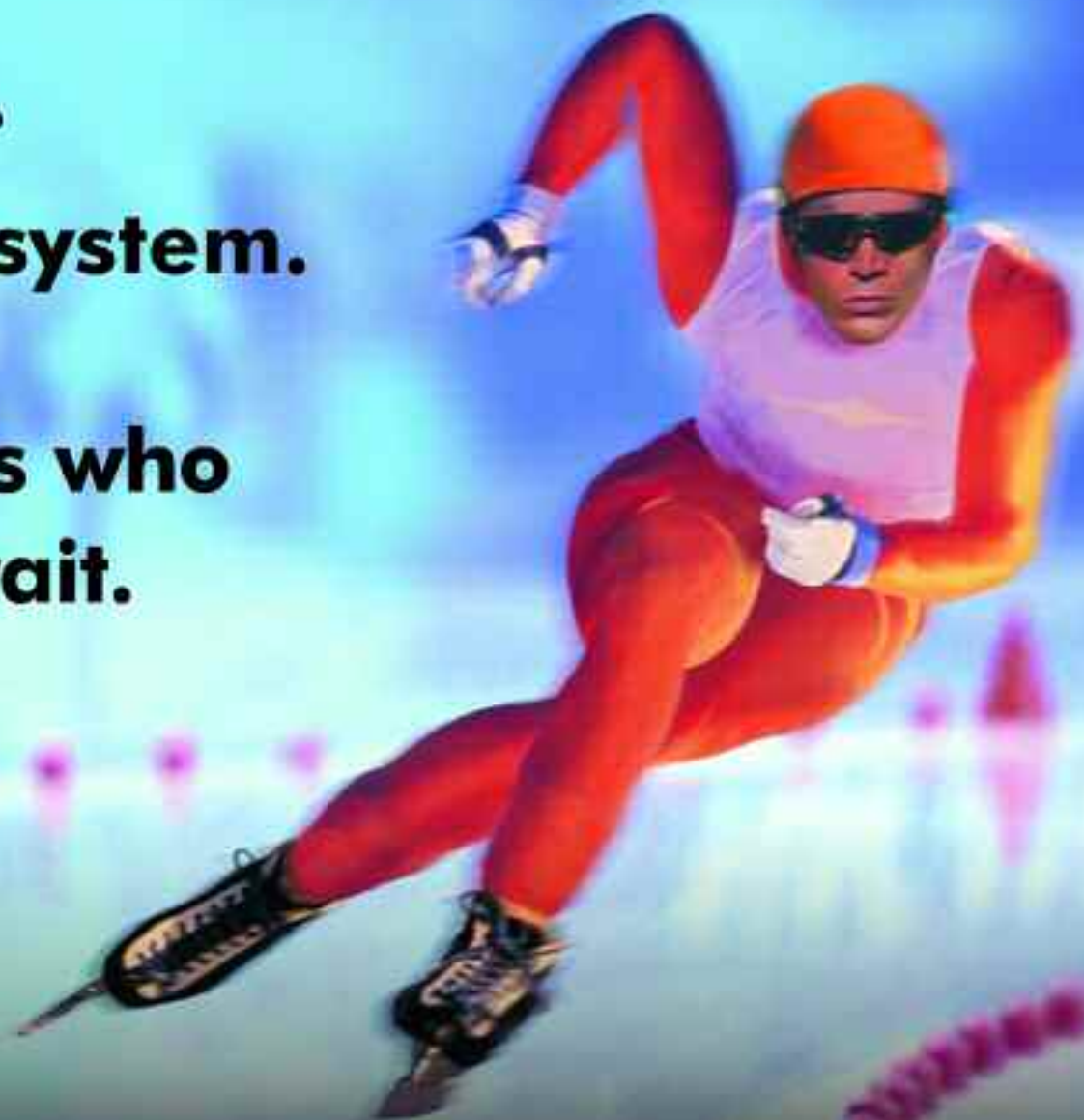
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# On Its Face, ALM's Appealing



*It's the right vision, analysts say, but beneath the surface, a lack of tool integration, cultural factors slow adoption*

BY JENNIFER DEJONG

To hear some tool makers tell it, the era of application life-cycle management is already here.

Supported by integrated ALM offerings, they say, architects, developers, testers and operations managers are working in tandem, producing better applications, faster and with fewer defects than ever before.

But according to industry analysts, the reality doesn't come close. Most development teams have taken only tiny steps toward ALM. "What tends to happen is that customers buy one or two pieces," said Bola Rotibi, senior analyst

at U.K.-based research firm Ovum, referring to requirements management, issue tracking, source code control, testing and defect tracking tools, among others. And some customers use the tools only as point products, rather than in the ALM way, she said.

Lack of integration among different tool makers' offerings, and the challenge of working in the new way that ALM demands, stand in the way of more widespread adoption, the analysts say. Nonetheless, they agree that ALM's promise of faster, more efficient application development is real, and forward-looking teams are heading in that direction.

"Organizations that want to be competitive in the future are paying attention to ALM," said David Kelly, president of Newton, Mass.-based Upside Research.

"It isn't just a flash in the pan, a stupid idea," said Ron Schmelzer, a senior analyst at research firm ZapThink, in Waltham, Mass. "ALM is sensible."

#### 'SOA SAYS...'

Integrated ALM offerings can help companies comply with government regula-

tions such as the Sarbanes-Oxley Act, which may require, among other things, that a company document changes made to business applications. But the bigger ALM driver is the growing adoption of service-oriented architectures. "SOA says that everything must work with everything else," said Schmelzer. And an integrated ALM tool set can help an organization more easily keep track of all the moving parts.

"Organizations need to not only make sure they have the technical processes to deliver application ser-

► continued on page 30



# Getting Real About ALM

◀ continued from page 29

vices," said Kelly, "but they also need to make sure they have the organizational capabilities to define, capture, share and manage service requirements, services delivery and ongoing services support."

In SOA, applications aren't islands,



ALM is about tool integration and workflow, says Forrester's Schwaber.

they are constellations, added Dana Gardner, principal analyst at Gilford, N.H.-based research firm Interarbor Solutions. "How will an application behave when it is deployed in an ecology of other apps and services?" That is a question that developers aren't used to asking, he said.

Implemented effectively, and supported by underlying tools, an ALM-based development process can answer that question, said Kelly. "ALM can have a big impact on enterprise software development teams when done right," he said. "But like exercise or diets, effective life-cycle management takes some discipline to see the results."

## ALM: THE PROCESS

Step one in adopting a disciplined approach is recognizing that ALM is a process, not just an integrated tool set, said Forrester Research analyst Carey Schwaber. "You have to think about the processes you want to use before you think about the tools," which means factoring in all the face-to-face interactions

## ALM: IS THE PAYOFF THERE?

Application life-cycle management promises to make organizations that adopt it more productive. Analysts believe ALM will deliver on that front, but they are not looking for the big payback anytime soon.

"The payoff is down the road a ways," said David Kelly, president of Newton, Mass.-based Upside Research. "It takes effort and work upfront for any given company to define the proper ALM approach."

Even when companies do cash in on ALM investments, the returns are likely to come in the form of soft benefits, rather than hard savings. The payoff is increased quality, greater responsiveness and better overall management and IT governance, said Kelly. Such benefits are geared to the corporation overall, which aims to give top executives a window in the development process, rather than to individual developers, said ZapThink analyst Ron Schmelzer. "Does ALM make organizations more productive? Yes," he said. "But individual developers? I am not sure. It adds a lot of overhead."

ALM forces developers as they are writing code to think about what other people need to be aware of, he explained. "That is very uncomfortable for a lot of programmers," said Schmelzer. "They wish they could say, 'Leave me alone and let me program.'" But with ALM's arrival, the days of "give me the requirements and let me produce code as a craftsman" are over, added Interarbor analyst Dana Gardner.

—Jennifer deJong



It takes effort to define the right ALM approach, says Upside's Kelly.

and other communication ALM entails, Schwaber said.

"How are you going to work with the business user, the testing team, the operations managers? You have to understand how the entire organization

works," said Ovum's Rotibi. "Traditionally, software development, unlike other engineering disciplines, has placed little emphasis on process. That's why we are at an impasse now."

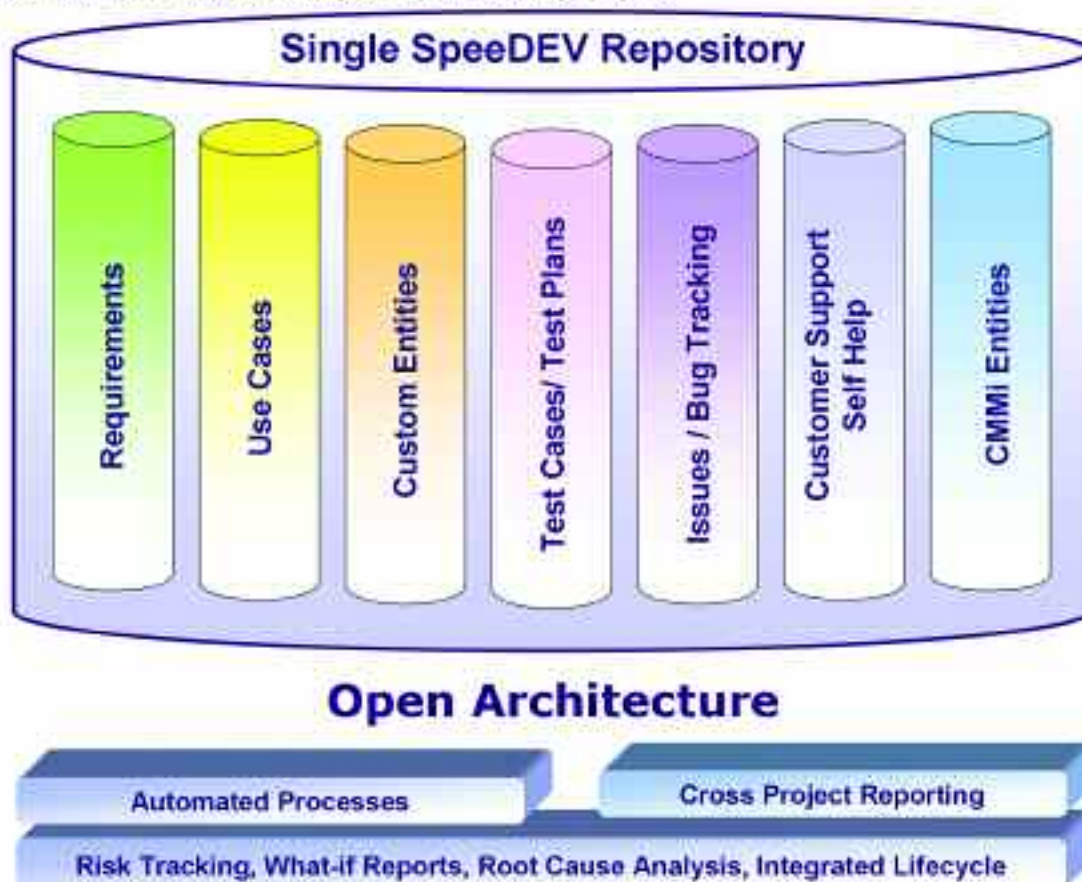
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# Getting Real About ALM

◀ continued from page 30

Moving beyond that is difficult, especially in established companies with deeply entrenched ways of working. "There are organizational barriers," said Schwaber. "Testing reports to one boss, programmers report to another."

ALM is also pulling together development and deployment, which have long been separated, added Interarbor's Gardner. "In the past, developers created applications based on requirements and dropped them in [someone else's] lap, to be deployed on the other side of the fence." Now, there has to be a shift in thinking, so applications are designed with deployment and flexible implementation in mind, he said.

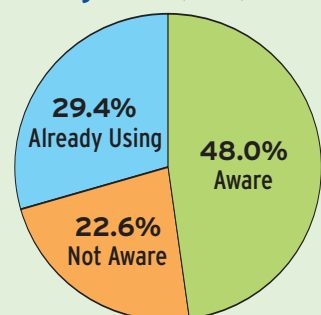
## ALM: THE TOOLS

And, as if the cultural hurdles weren't high enough, the tool terrain is rocky, too. "There isn't much interoperability between different vendors' offerings," said Rotibi. Teams can buy an integrated ALM suite from a single tool maker, she said. But in the real world, companies have acquired individual tools over time, and no one wants to rip and replace. "You have to do ALM with what you have got," she said.

ALM is about tool integration and workflow, added Schwaber. "That leaves teams to cobble together the tools themselves, or demand integration from the vendors."

## DECISION MAKERS HAVE ALM ON THEIR RADAR SCREEN

Are you aware of, not aware of, or already using application life-cycle management (ALM)?



Source: Forrester Business Technographics November 2005 North American and European Enterprise Software And Services Survey

Individual tool makers may provide point-to-point integration between their product and another software company's offering, but they aren't likely to offer that service for an entire

cobbled-together ALM suite. The Eclipse Application Lifecycle Framework (ALF) project aims to solve that problem, providing a loosely coupled, Web services-based way to link

together disparate offerings.

"ALF has potential," said Rotibi. "They are on the right track." But the project does not expect to deliver its 1.0 release until September 2006.

"The tools' reality is a work in progress," said Gardner. The tool makers may have overstated how widely ALM suites are used. But they are doing a good job of educating development teams about the need to improve the software delivery process, added Rotibi. "I commend them for that." ■



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## EDITORIAL

## Abuse of The Community Process

**B**EA, IBM and Sun are at it again. Remember that a key principle behind the Java community was “Collaborate on standards, compete on implementation”? Well, of late, developers have heard more about “compete on standards.”

The latest culprit is a spec called the Service Component Architecture, proposed by a bevy of companies, including BEA, IBM and Iona. Sun’s crying foul, complaining that SCA partially duplicates work already done by JSR 208, the Java Business Integration (JBI) specification unveiled as the centerpiece of last summer’s JavaOne.

But don’t forget: JSR 208 wasn’t a slam dunk. Both BEA and IBM abstained in the final approval ballot for Java Business Integration, and clearly those companies feel no loyalty toward a Java Community Process initiative that they didn’t support.

Worse, the fact that BEA and IBM pushed this particular project, which includes both SCA and an earlier project from the two companies called Service Data Objects, outside the Java Community Process makes one wonder exactly what the JSP is for. Complicating matters is that SCA is billed as a language-independent platform, so while it in part duplicates JBI, it’s not clear if the JCP is truly the best place for it.

According to Iona’s Eric Newcomer—who supports both JBI and SCA/SDO—the proposal will go to Eclipse, a Sun nemesis, instead of the JCP. But if that’s the plan, why were these specs developed behind closed doors, rather than using the Eclipse collaborative process?

Despite the broad acceptance of organizations like the JCP, the Eclipse Foundation and the Apache Software Foundation, it’s still far too common for companies like BEA and IBM to develop complete technologies and specifications first, and deploy them within their own products. Only after they have a comfortable head start, do they seek a community rubber stamp of the completed work. (Microsoft is just as guilty, using Ecma International to “fast track” specifications, like the Office 12 XML schema and C# language, into de facto industry standards.)

These practices abuse the notion of community development and “open standards.”

Groups like the JCP, Eclipse, Apache and Ecma should only accept projects if there is some real chance that different interest groups will have a legitimate say in the development of the specifications and technologies. Being presented with a complete spec as a *fait accompli*—and then endorsing that spec essentially unchanged—merely demonstrates that these organizations are focused on pleasing their corporate sponsors, not just on developing best-of-breed specifications that create opportunities and broaden a standard base for innovation.

If companies like BEA, IBM and Microsoft have good ideas for developing specifications, and want those specs to be endorsed by industry consortia, they should develop such specifications within those industry consortia, in an open, transparent and competitive manner. Then, and only then, should those consortia endorse them as standard. Rubber stamping does the software development industry a disservice. It’s time for the consortia to just say no. ■

## ‘iPodify’ My Software Now!

**W**hy can’t all software be like an Apple iPod: simple, elegant and fashionable?

It’s time that software vendors follow the lead from consumer electronics. Hide rich functionality in an intuitive design. Give me tremendous value for the cost. And above all amaze me with your innovation.

Software has gotten boring, but this wasn’t always so. Those of us with speckles of gray on our heads (or nothing on our heads) remember when new releases, whether desktop or server, were met with high anticipation (yes, even Windows 3.1, OS/2 Presentation Manager and TopView).

New products almost always delivered on the promise of innovation, power and simplicity. These applications focused on value over hype. Advancements in underlying software plumbing were always secondary to the functionality provided.

## THE GREAT WAR

The enterprise software industry, though, continues to muddle through the Great Infra-

structure War. Venerable scribes devote their air time and ink to every skirmish, espousing their beliefs in the True Way. These hostilities are based on differences in dogma (open versus proprietary, open source versus the world), while fundamental technologies, such as J2EE and .NET, and vendor and consortia standards drive the development of things such as Web application servers, middleware and portals.

Vendor battles are heating up, including the conflict between Microsoft’s Metro and Adobe’s PDF and the new OpenDocument formats. Well, it’s not new technically, but new to the hype. With IBM, it’s all WebSphere, all the time. But wait, there’s NetWeaver from SAP. Oracle wants you to use Fusion and 10g. And then there’s Linux, Windows Vista, “virtual” everything and the mainframe and AS/400 (like COBOL, they will never die).

As any user would rightly ask: When did it become about the vendors and their specifications and standards, and not about me and my needs and my users? Am I just an extra in this movie?

Sure, I care about how things are engineered. I care about standards. I care about interoperability. But at the end of the day, I want a great application that meets my requirements, whether I am a manager, developer or analyst.

And in business, make it easy for me to understand how it helps me work better. Make it easy and painless to install. Don’t leave me feeling like I had a root canal without Novocain.

In the electronic document market, where documents are created with input from any enterprise software applications and output to any device—users complain that the infrastructure-level standards discussions miss the point.

Chris Stone



## Letters to the Editor

## WHY MAINTENANCE MATTERS

In the olden days, the first genius in the company picked up a new software, language or methodology and created a killer application. Management gave them lots of recognition and turned it over to the next tier of subgenius for maintenance and enhancement.

That group picked up knowledge you gain from study and manipulation of the existing code. It was possible to bring relative novices into the maintenance group a few at a time and grow really good developers and eventually architects.

They learned from and improved upon that initial example.

The next group of applications written in the same software, language or methodology were created by this group, and they worked great.

Enter the current time. The killer application is either

developed offshore or immediately shipped there for maintenance.

It may or may not have been the best example of the technology. No lessons are learned in-house. No next set of developers gets the advantage of working with an example.

The chance to grow new developers in the technology goes overseas.

This is the same thing that happened to our engineers. When the manufacture was here, they could go out and get their hands dirty. They could see the problems firsthand and adapt.

Now even the engineering is done offshore, and the number of kids willing to enter a field where opportunities are limited and all practice is theoretical has plummeted.

Advantage offshore! Set! Match!

Lissa Klein  
SBC (Now AT&T)

## FOREVER FILING

Mr. Binstock’s column [“The 100-Year Document,” Dec. 15, page 35] brought up a lot of valid arguments for a file format that is not dependent on a vendor to own or maintain the software required to access the files. It is true that Adobe may not be around 100 years from now. But since PDF is a publicly available specification, developers have been able to build tools for creating, viewing and manipulating PDFs for years without Adobe’s involvement.

At the end of the column, Mr. Binstock states that governments and vendors need to develop a consortium to devise and commit to a standard. This process is already well on its way with the development of PDF/Archive—PDF/A for short.

A subset of PDF, the format was designated as an ISO standard in September. The organizations involved in establishing



**APPS, NOT INFRASTRUCTURE**

Users don't buy infrastructure. They buy technology that solves a specific problem or meets a specific need. In other words, they buy applications. The technology industry lost sight of this fact in the supply-side-rich late 1990s and paid the price.

Let's learn from our mistakes. It is time to move from infrastructure to "How the hell do I increase revenue?" to let users focus the discussion on what companies are trying to do with the data they present to customers, not on the infrastructure they use to do it.

For example, one of the largest private banks in Europe turned to EDP software to aggregate data from different sources in one customer-facing document and present it in a compelling document that is delivered in any format the customer wants: e-mail, snail mail or online. It's the software application that helps them create a brand and boost customer satisfaction.

A national postal service that handles 20 million pieces of mail every day needs to integrate a Tower of Babel group of systems into its ERP

environment so customers get their mail on time. The customer isn't saying, "Get me another Java programmer!" Instead, the people are asking for an application that takes what it needs from all their systems and lets them expand their services as customer demand grows.

I'm not suggesting that innovative standards-based trends such as XForms and Metro versus PDF aren't important issues. But let's keep these discussions within the context of the applications they will enable.

If a vice president in a large retail bank has to increase and cross-sell more products in a dozen languages to thousands of customers, do you think he's saying, "I know: Use XML"? Of course not.

If a large electronics retail chain needs to synchronize six different data sources onto shelves where 78 million price tags can be changed in real time to react to competitors, do you think they say, "If we just use SOA and Linux, we're there"? If I dig a really deep hole, when will it stop?

If you learned a language like COBOL or PL/I, you can pick up most others. SOA and Web services? We called them

FTP and CORBA 15 years ago. PDF, XFA, ODF and Metro? We called the underlying technology OpenDoc a dozen years ago. Not to be outtyped by Apple and Taligent (remember that IBM joint venture?), along came Microsoft with OLE (which it really got from HP's NewWave), Sun with JavaBeans and a host of other components that fueled the debate but never really developed a solution.

I have always been amazed at how much attention, time and money has been spent over the past 30 years on plumbing when what businesses really wanted was to flush a toilet and make ice.

In the end, isn't it all about creating, editing, storing, deleting and presenting via multiple channels (such as print/fax/e-mail/SMS/Web/hologram)?

The world of computer science is filled with smart, sophisticated people trying to prove it. It's not really science, its math.

If you want a software project to be successful and productive, you hire a bunch of like-minded developers who are fanatics in a language, infrastructure or service. It doesn't matter what they use.

Successful software is either a category creator or a simpler process.

It's time to focus the discussion on what companies are trying to do with the data they present to customers, not on the infrastructure they use to do it. Customers should always write down the business requirements of the problem they are trying to solve.

Ever read a requirements document from a Global 2000 company? It looks as if it were crafted by 25 computer science grad students who just poured through 15 computer trade publications. You need a Wikipedia to figure it out.

**NOW WHAT?**

It's all about unlocking the data locked up by ERP, CRM and ECM. Okay, I've input it, stored it, archived it, managed it and looked at it—now what? How do I present it to somebody to attract more business?

That is the most important question of all. ■

*Chris Stone is president and CEO of StreamServe, which provides business communications management software.*

this standard include AIIM, NPES, the National Archives and Records Administration, and the Library of Congress.

**Melanie Warfel**

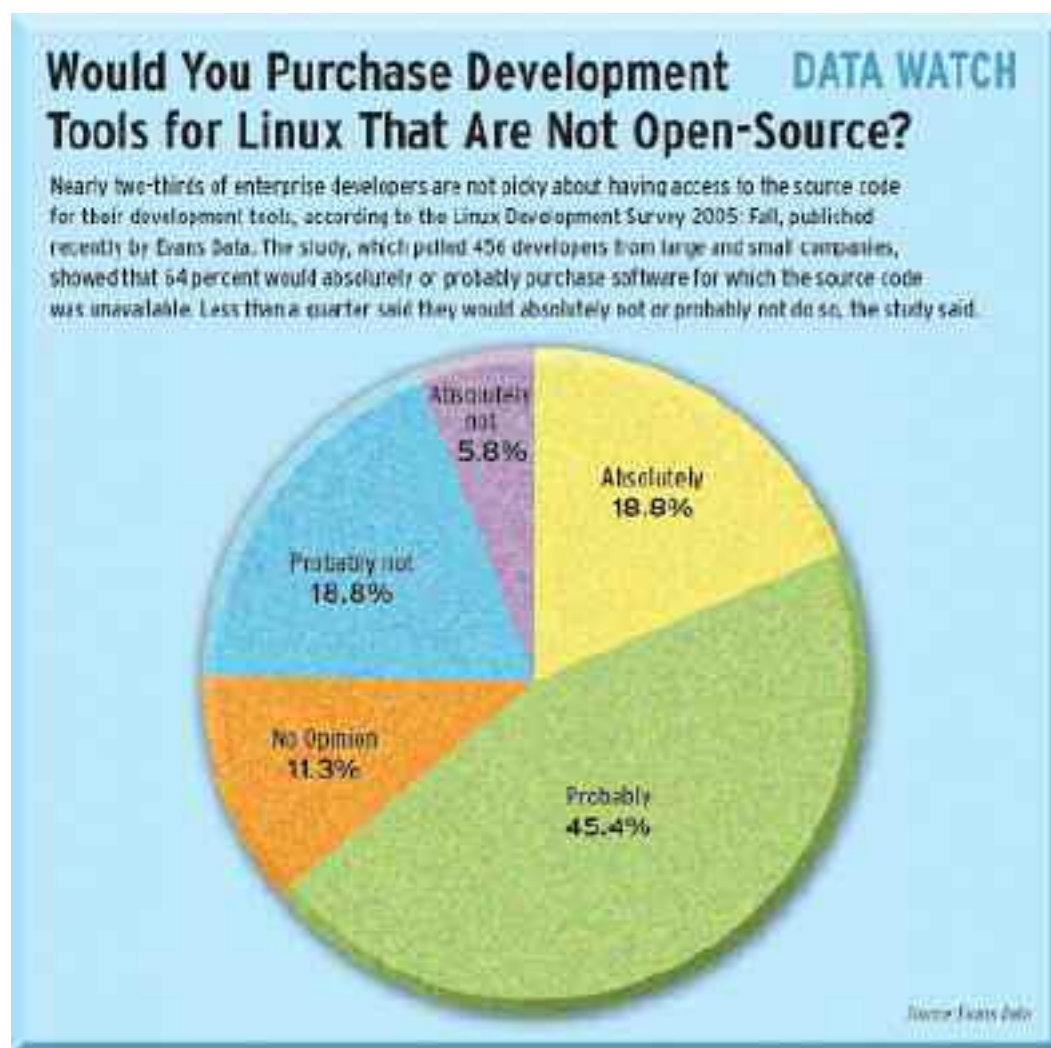
Director, Worldwide Standards, Adobe Systems

*Andrew Binstock responds: PDF/A is a step in the right direction. However, it will become a true solution only once the adopting agencies provide a mechanism by which we can be certain that documents encoded today will display the same in 100 years or more. This, I believe, requires a public and perpetual commitment by these agencies as well as the proper funding.*

**WHAT DO YOU THINK?**

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# Keeping Open Source Moving Forward

In my previous column, I discussed how open source today has morphed from a grass-roots revolution into a professional phenomenon. That is, most contributed code today is written by professional developers who are paid to write it. As with all shifts, this transition brings good news and bad. The good news is that high-quality open-source products keep coming to market at a remarkable pace; the bad news is that the bar to entry for new open-source developers keeps going higher. Whether the same grassroots movement that created GNU tools, Linux and Apache could deliver such important products today is a question that has no clear answer.

Still, sensible but smaller-scale solutions can grow and prosper in the interstices between other products. Consider the Spring application framework, which is quickly gaining momentum as an alternative to J2EE. It evolved from the code presented by Rod Johnson in his book "Expert One-on-One: J2EE Design and Development" (Wrox, 2002). And, during the past two years, it has gained traction by the contributions of numerous volunteers.

Contributing to these smaller-sized projects is still possible and fun for the after-hours hacker, but as projects increase in size and complexity the

number of people who can contribute meaningfully begins to dwindle. This is due especially to one factor that works against the grass-roots contributor: the sheer complexity of today's projects (which is often made worse by a paucity of documentation for the code). But I'm getting ahead of myself. The right way of looking at the question of amateur contributions to open source is to consider what makes projects viable.

I asked this question of Miguel de Icaza (who leads the Mono project) some years back, and he instantly shot back, "You have to be able to build a community." Other project leaders all say the same. A community requires three preliminaries: a great idea, a good programming start that attracts contributors who can extend the basic implementation, and a way to make the project widely known among potential contributors.

If you get that far, which is further than most open-source projects do, you need to know how to build and maintain that community. This takes considerable skill. Linus Torvalds was very good at this, as is de Icaza. (See his blog at [tirania.org/blog](http://tirania.org/blog) for an example of how to keep a community apprised of its

members' progress and how to share credit without the slightest trace of condescension.)

Still, personal diplomatic skills are only one aspect. The community has to have the right texture. If it doesn't, it can split apart to the detriment of the project (as with the Parrot/Perl 6 virtual machine). Finally, you will need to know how open-source communities function, so that your contributors' mindset

is met with the expected reality. No better guide to this world and its workings exists than Karl Fogel's "Producing Open Source Software" (O'Reilly, 2005), which explains the lay of the land and gives important practical advice on navigating the bumps and moguls. The book is an equally useful guide for contributors.

Attracting contributors and holding on to them is one view of the open-source dynamic. But the view from the other side is that of an outsider looking in: the developer who wants to contribute but does not know how. These contributors, I believe, mostly fall into two categories: those who need a specific feature and are willing to try to implement it, and those who are attracted to the project and want to help in a more

plenary fashion. The former far outnumber the latter. The problem they face, though, is one of navigation: where to make the needed change and how? Many projects have poor documentation on the workings of the software, and almost nothing at all on the workings of the code.

This is where the model of personal contributors begins to break down. The task of acquainting oneself with a codebase and understanding the specific code in the neighborhood of the patch is so time-consuming that only professionals have the bandwidth to do this anymore. (Actually, amateurs who have been with the project from its early stages can participate because their mental maps have grown organically with the project. But this dynamic means that at some point, the size of the codebase imposes a sufficient barrier to entry that the current contributors represent the maximal number of nonprofessionals who are able to participate. Beyond that size, the numbers taper off, as I mentioned previously.)

The scope of projects is not likely to decrease, and so, the trend of professional open-source development will only intensify. Fortunately, because companies find benefit in the practice, open source will continue to grow. But it will no longer use the model that originally brought it acclaim. ■

*Andrew Binstock is the principal analyst at Pacific Data Works.*

## Integration Watch



Andrew Binstock

# I Text, You Text, We All Text for iText

I have a soft place in my heart for typesetting systems. I've built several over the ages, and have typeset many of my own books. My monthly C Chest column in Dr. Dobb's Journal was canned in 1987 largely because of my "wasting" three months presenting the source code for my version of a markup-language interpreter that did layout: troff. (The editor insisted that both Unix and markup languages were irrelevant, obsolete technologies. For what it's worth, Bill Gates was saying exactly the same thing about HTML at the time.)

I'm going to try my luck again: In my Dec. 15 column, I promised that I'd report back on a typesetting system: iText, Bruno Lowagie and Paulo Soares' PDF-creation library ([www.lowagie.com/iText](http://www.lowagie.com/iText)). Let's pick up that thread.

To refresh your memory, a project required me to create a few simple printed reports—the complete contents of which weren't known until runtime—in CSV, HTML and PDF formats. I rejected JasperReports, which I found to be an overly complicated, poorly documented nonsolution to this problem. You know something's wrong when it's harder to use the tool than it is *not* to use the tool.

The iText library—the PDF-generation library that JasperReports uses—is, on the other hand, very good. iText is a full-blown typesetting system that lets you do in Java pretty much everything you can do with PostScript. You can use iText to lay out complex documents containing both text and images to produce a PDF representation. (Note that iText also can produce HTML and RTF files, but it doesn't do as good a job in these formats as it does with PDF. The table-layout classes, essential for reporting applications, work only with PDF output, for example.)

Though it does have all the low-level APIs that you need to build a real typesetting system, the real strength of iText is the high-level objects that let you manipulate the document at the level of paragraph and chunk. (A chunk is part of a paragraph.) You assemble a paragraph simply by adding chunks of text to it, and can easily modify paragraph attributes like font size and margins. There's also a very nice set of table-creation objects. The vast majority of applications can

get by with nothing but these simple-to-use APIs.

On the output side, iText uses the Builder design pattern. You attach a "writer" as defined by that pattern to the document you're creating, and that writer takes care of the mechanics of building a particular output format.

That is, you can create a document without needing to know whether the ultimate output format will be pdf, rtf, html and so on.

iText documentation is a mixture of the usual JavaDoc and an online tutorial called "iText by Example." The fact that this tutorial is not printable is a definite negative, but it's well organized and easier to use than many online tutorials. The tutorial presents the material in a linear way that guides you through the entire library, as compared with a blob of links that force you to bounce around in the material more or less randomly. There are a few minor linguistic anomalies (the author likes to say "Remark that" instead of "Note that," for example), but they don't get in the way of readability.

## Java Watch



Allen Holub

The main problem with the tutorial is that it's not complete. The PDF-Form-generation mechanisms are not covered, for example.

Very much on the plus side, the tutorial is laid out using a use-case approach that I've advocated in the past. It focuses on tasks that you are likely to perform, then tells you how to accomplish those tasks. It's also organized in such a way that you can get to work immediately if you're doing simple stuff, relegating the gory details that you're not likely to need to later sections. There are plenty of coding examples.

Consequently, I've decided to code directly to the iText APIs rather than using a report-generation package like Jasper. The resulting report will be both better looking and easier to code than the Jasper equivalent. Moreover, though iText can create HTML output, it is easily integrated into a Servlet to deliver PDF directly to the browser. Since this way of working gives me a better-looking page than the HTML, I plan to skip the HTML entirely and just present PDF to the user. And the icing on the cake is that I can do iText without any XML whatever. I'm happy. And I still have my column! ■

*Allen Holub is an architect, consultant and instructor in C/C++, Java and OO Design. Reach him at [www.holub.com](http://www.holub.com).*



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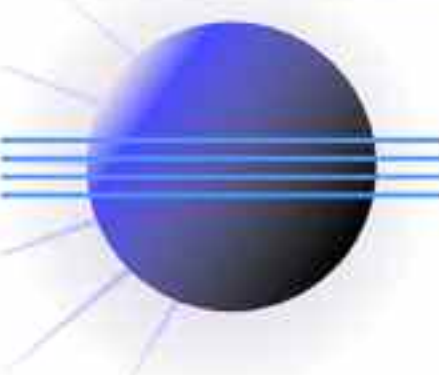
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# Type Safety

C and C++ can be made as safe as managed languages like Java and C#, with a minimal runtime overhead penalty. While no one technique can eliminate all buffer- and pointer-related security holes, there is a set of techniques, libraries and tools that can capture all such holes. Only a fraction of vulnerabilities require runtime instrumentation, making the average runtime penalty for a provably safe C or C++ program in the low single-digit percent realm. This is the claim of Plum Hall Inc. and its "Safe-Secure C/C++" project, at [www.plumhall.com/sscc.html](http://www.plumhall.com/sscc.html).

When I first heard the claim, I commented to a friend that if it were anyone but Tom Plum making it, I'd dismiss it as spam. Those of us who watch the software development industry regularly receive claims of breakthroughs that vastly overreach their capacity; solutions to C's buffer vulnerabilities are as predictable as visual tools that "eliminate programming altogether."

Tom Plum, though, is the compliance guru of the ISO C++ Standards Committee, and his company produces conformance suites that validate C, C++, Java and C# compilers' adherence to standards. (He is also a friend and neighbor of mine and, in years past, I've occasionally consulted to Plum Hall.)

As SD Times columnist Andrew Binstock has ably pointed out in his recent columns, C remains the most important language in the realm of open-source software. I would go further and say that C and C++ remain the most important languages for professional programmers. Not for professional programming, necessarily, but for programmers.

Proficiency in C, coupled with (at least) a working understanding of C++ as a more type-safe version with objects, is the single most valuable technical ability for a professional programmer. This has been shown in every analysis of job postings for more than a decade, as well as being intuitively obvious to anyone who's been on either side of a technical interview.

The well-deserved acclaim for managed languages has for a decade largely drowned out advances in C/C++. There is ample evidence that it may be time for C/C++'s return to the spotlight, with the arrival of exciting projects like Safe-Secure, C++/CLI and Concur (Herb

Sutter's proposal for high-level concurrency abstractions, which I will discuss in a forthcoming column).

Legacy codebases and performance are the Scylla and Charybdis of C/C++ vulnerability. C/C++'s long history and universality guarantee that essentially all nontrivial projects incorporate large codebases, libraries and complex build scripts. Remediating a thousand lines of code is one thing, remediating a million is entirely different.

Using the safe version of the standard library functions is certainly the first step (`hello strcpy_s()`), but things quickly move beyond search-and-replace when you get into data structures and unions. On the other hand, you can punt on source-code changes and try a new memory-management subsystem, thinking that "managed languages do this with little overhead," but doing so has always forced a decision between restricting C/C++ or accepting an overhead that can actually be higher than that achievable in more restricted languages!

Plum's strategy, though, is not to

attempt a single "general case" solution, but to use tiers of strategies and tools, beginning with source-code remediation. He claims that by the time his techniques get to the need for runtime checking, it's such a constrained circumstance that the overhead can be minimal. To test, he has tackled portions of the SPEC/GPC benchmark suite. Is it surprising that, even in such pored-over code, he discovered vulnerabilities (arising, apparently, from some obscure and unlikely combination of command-line switches)? He claims that the resulting "safe and secure" benchmarks run with less than 10 percent overhead.

If Plum's extraordinary claims are true, the thing that's most intriguing to me is the possibility of introducing PKI-style "trust chains" into the execution of software, especially critical infrastructure software such as firewalls and routers. Sadly, Plum says that he faces a chicken-and-egg problem in that the compiler vendors aren't seeing security at the top of customer demand and that customers are not demanding it because they aren't aware it's a possibility. So if you'd like to see C/C++ secured, start screaming. ■

Larry O'Brien is a technology consultant, analyst and writer. Read his blog at [www.knowing.net](http://www.knowing.net).


## Windows & .NET Watch



Larry O'Brien

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# Dead Reckoning

Oct. 1, 1492: Christopher Columbus and his crew have sailed for more than a month, yet there still is no sight of land. With nothing but a compass and quadrant (an earlier form of the sextant) to guide them, and by using primitive time and distance calculations, Columbus can track how far his ships have traveled. What he cannot tell, and what is much more important to the crew, who have been bobbing about in the vast Atlantic Ocean in small wooden ships, is how much farther they have to go.

Because the entire voyage is based on the theory that they can reach Asia and the East Indies by sailing west from Spain—something no one has yet done and measured—they really don't know how close or far they are. In his journal, Columbus notes that they have had clear skies and steady winds, but now the crew is getting angry and fights have broken out. There is even talk of throwing Columbus overboard and turning around to sail back to Spain.

Oct. 7, 1492: Land ho! Columbus does not see the fine cities described by Marco Polo during his earlier visits to the Orient. In fact, the people are of a different color and not wearing very many clothes. He believes he has reached islands just east of Japan.

This was a time before celestial navigation, before a course could be charted by the ship's position in relation to the stars. Sailors of Columbus' day would measure their course and distance from a starting point—plotting their direction using a magnetic compass, and calculating speed (and thereby distance) by throwing some piece of flotsam overboard and seeing how long it took the ship to pass it. This method of navigation is known as dead reckoning.

More than 500 years later, despite all the advances in technology that have occurred, many software developers find themselves in the same boat as Columbus. They embark on projects without really knowing how far they will have to travel, if the seas will be rough or smooth, and—in many instances when requirements change very often—where they will end up.

## Industry Watch



David Rubinstein

Mike Cohn, a senior consultant for Cutter Consortium, believes, as the sailors before him did, that it's fundamentally more important to know how much further a software project has to go than how much time has been spent on it already.

Unfortunately, he said, most metrics tools can only measure where a project's been. To see where it's going, some of the principles of dead reckoning apply.

"Teams get caught up tracking how many hours they've put in," Cohn told SD Times. "But I want to know how many I have left." Tools, he said, can tell you that you've spent six hours on a particular piece of a project, and that you're 90 percent done. But like seafarers sailing into a strong gale, what seems to be



progress to a development team actually is losing ground. "You might have worked 50 hours, and the tool could tell you you're a certain percent closer to completion, but in those 50 hours, you might have learned that the project will require another 100 hours. You worked hard all day but hit a headwind and were pushed back farther than from where you started."

Cohn is a proponent of the agile process known as Scrum, which uses burn-down charts, daily meetings and short iterations to help navigate a course through a development project. "You say, 'Let's sail from here to here and give it two weeks.' You try to work in short iterations because you never really know the long goal."

The burn-down chart helps managers assess how a team is doing in terms of meeting its goals, if the release will be on time with the desired quality and functionality, and how the product is filling out compared with what's needed. Cohn explained that team members commit to how much work they can complete in, say, two to four weeks. Each day, a log is updated with how much work was completed and how much is left. "It shows where you're going, and if you're finishing the right amount to get there." At those daily, 15-minute meetings, three questions are asked: What did you do yesterday? What are you doing today? What are the impediments to getting it done?

The aforementioned advances in technology have also brought excellent project forecasting and estimation tools that help managers ensure the work remains on track. The combination of improved processes and more powerful tools can raise the level of development, and ensure the project ends up where it was expected to when it first left port.

Imagine what Columbus could have accomplished with GPS. ■

David Rubinstein is editor-in-chief of SD Times.

## BUSINESS BRIEFS

**IBM** announced two acquisitions last month—one in the area of network management and the other in portal technology. First, IBM said it will acquire network management software provider **Micromuse** for about US\$865 million, or \$10 per share. IBM intends to integrate its software into Tivoli and strengthen its Tivoli systems management business unit. The San Francisco-based Micromuse has about 650 employees; its software handles voice and video traffic as well as data. In the other deal, IBM signed an agreement to acquire **Bowstreet**, a Massachusetts-based provider of portal technology. Bowstreet will help further IBM's strategy around SOA and enable customers to combine a wide variety of pre-existing data into composite applications, or into a WebSphere Portal environment. Financial terms of the transaction were not disclosed. . . . **Oracle** announced an update to its multicore processor licensing policy, which increases parity among hardware vendors and helps customers take advantage of advancements in multicore processor chips from vendors such as **AMD**, **IBM** and **Intel**. The processor definition has been amended as it relates to counting multicore chips to determine the total number of processor licenses required. A detailed explanation of the new policy can be found at [www.oracle.com/corporate/pricing/sig.html](http://www.oracle.com/corporate/pricing/sig.html).

**EARNINGS:** Fiscal 2006 second-quarter revenue for hardware maker **Palm** was announced at US\$444.6 million, an increase of 18 percent from the year-ago period. Net income on a non-GAAP basis totaled \$22.4 million, or 47 cents per share, down from last year's net income of \$27.2 million, or 53 cents per share. Palm cited a change in tax rate between the reporting years as a reason for the decline. . . . **Oracle** released fiscal 2006 Q2 GAAP revenue of US\$3.3 billion, up 19 percent compared with the same quarter last year. Total non-GAAP revenue increased 23 percent, to \$3.4 billion, for the quarter. GAAP earnings per share were 15 cents, down 2 percent from Q2 last year, while non-GAAP earnings per share were 19 cents, up 16 percent. Quarterly GAAP net income was \$798 million, down 2 percent, while non-GAAP net income was \$972 million, up 16 percent. . . . **The SCO Group** reported revenue of US\$36 million for fiscal 2005 ended Oct. 31, a decline from \$42.8 million from a year earlier. For the year, the company posted a net loss of \$10.7 million, or 60 cents per share. In fiscal 2004, the company's net loss was \$16.2 million, or \$1.07 per share. "Even though the company incurred net losses during the fourth quarter and fiscal year 2005 as a result of expenditures for its continuing litigation, the management team accomplished its objective of returning the UNIX business to profitability," said Darl McBride, president and CEO. ■



## CALENDAR OF EVENTS

<b>Black Hat Federal</b> Washington, D. C. BLACK HAT <a href="http://www.blackhat.com">www.blackhat.com</a>	Jan. 23-26
<b>VSLive</b> San Francisco FAWCETTE TECHNICAL PUBLICATIONS <a href="http://www.ftponline.com/conferences/vslive/2006/sf">www.ftponline.com/conferences/vslive/2006/sf</a>	Jan. 29-Feb. 2
<b>Developer Relations Conference</b> San Francisco EVANS DATA <a href="http://www.evansdata.com/drc2">www.evansdata.com/drc2</a>	Feb. 6-7
<b>Software Security Summit</b> San Diego BZ MEDIA <a href="http://www.S-3con.com">www.S-3con.com</a>	Feb. 6-8
<b>RSA Conference</b> San Jose RSA SECURITY <a href="http://2005.rsaconference.com/us/C4P06">2005.rsaconference.com/us/C4P06</a>	Feb. 13-17
<b>Web Services/SOA On Wall Street</b> New York LIGHHOUSE PARTNERS & FLAGG MANAGEMENT <a href="http://www.webservicesonwallstreet.com">www.webservicesonwallstreet.com</a>	Feb. 27
<b>SHARE</b> Seattle SHARE <a href="http://www.share.org">www.share.org</a>	March 5-10
<b>Business Intelligence Summit</b> Chicago GARTNER <a href="http://www.gartner.com/2_events/conferences/bi4.jsp">www.gartner.com/2_events/conferences/bi4.jsp</a>	March 6-8
<b>Emerging Technology Conference</b> San Diego O'REILLY MEDIA <a href="http://conferences.oreillynet.com">conferences.oreillynet.com</a>	March 6-9
<b>Intel Developer Forum Spring</b> San Francisco INTEL <a href="http://www.intel.com/idf">www.intel.com/idf</a>	March 7-9
<b>SD West 2006</b> Santa Clara CMP MEDIA <a href="http://www.sdexpo.com">www.sdexpo.com</a>	March 13-17
<b>BrainShare 2006</b> Salt Lake City NOVELL <a href="http://www.novell.com/brainshare">www.novell.com/brainshare</a>	March 19-24
<b>EclipseCon</b> Santa Clara ECLIPSE FOUNDATION <a href="http://www.eclipsecon.org/2006/Home.do">www.eclipsecon.org/2006/Home.do</a>	March 20-23
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<b>LinuxWorld Conference &amp; Expo</b> Boston IDG WORLD EXPO <a href="http://www.linuxworldexpo.com/live/12">www.linuxworldexpo.com/live/12</a>	April 3-6
<b>Embedded Systems Conference Silicon Valley</b> San Jose CMP MEDIA <a href="http://www.esconline.com/sv">www.esconline.com/sv</a>	April 3-7

For a more complete calendar of U.S. software development events, see [www.bzmedia.com/calendar](http://www.bzmedia.com/calendar). Information is subject to change. Send news about upcoming events to [events@bzmedia.com](mailto:events@bzmedia.com).



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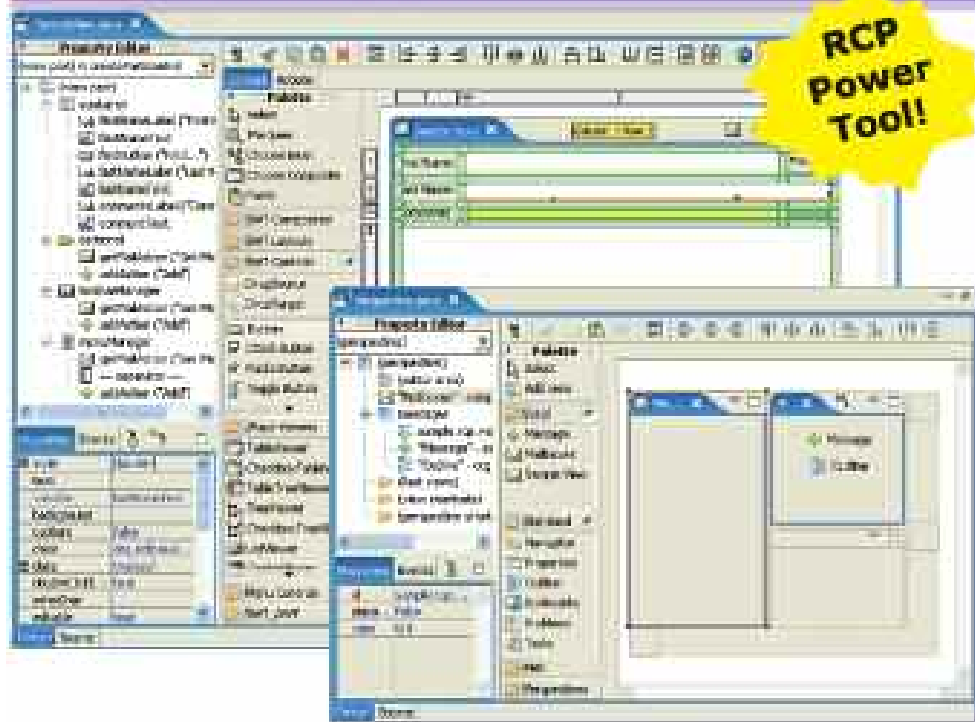
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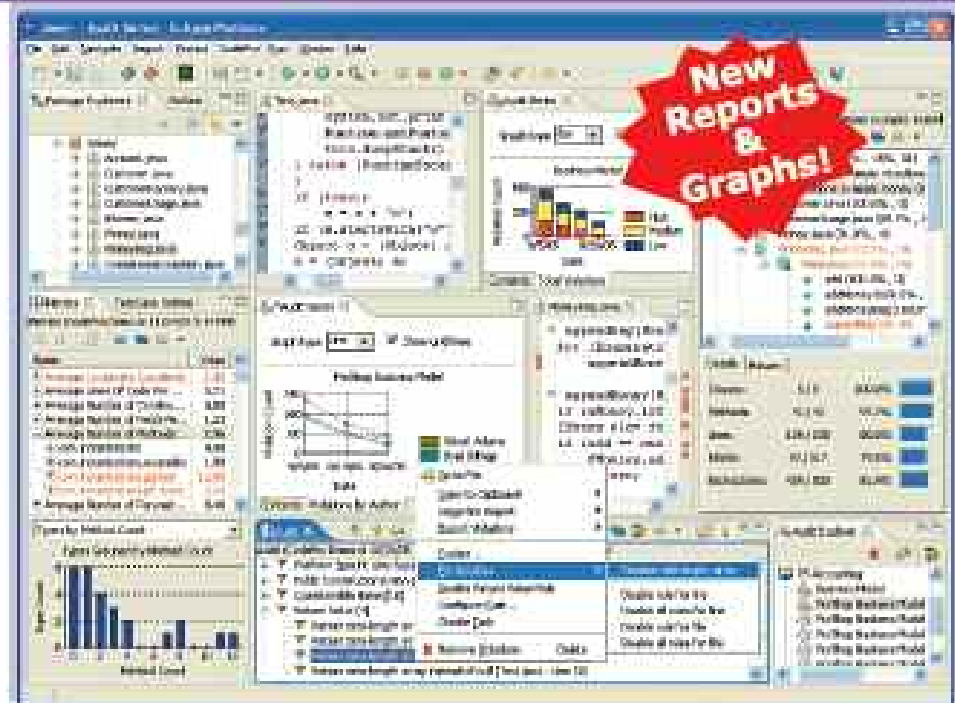
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